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Building on civilian literature, current U.S. and Allied doctrine, and historical case studies, this thesis proposes a lexicon to enable a more meaningful understanding of risk terminology and to create a baseline for understanding and communicating risk. In a similar manner, this thesis develops a mental model for risk analysis to help planners examine the strategic and operational environment and better estimate the risk to proposed military operations. This methodology is similar to other mental processes utilized in joint operation planning, and provides a sound basis for estimating risk. U.S. doctrine must change to provide essential guidance and tools to equip commanders and staffs to develop worthwhile risk assessments to inform seniors and subordinates alike. This thesis proposes methods and processes to reach that objective.

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JOINT FORCES STAFF COLLEGE

JOINT ADVANCED WARFIGHTING SCHOOL

RISK IN WAR: USING HISTORY TO INFORM A COMMON METHOD FOR UNDERSTANDING AND COMMUNICATING RISK IN JOINT OPERATIONS

by

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A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Joint Forces Staff College or the Department of Defense.

This paper is entirely my own work except as documented in footnotes.

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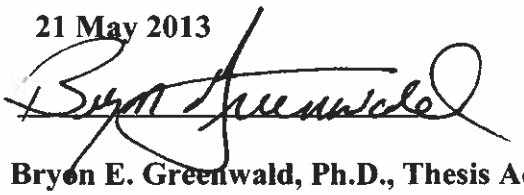
Thesis Adviser: Signature: 

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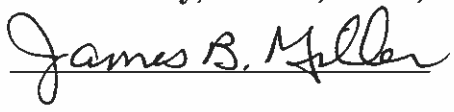
Signature: 

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ABSTRACT

Today's military doctrine fails to provide commanders and staffs with a process to focus the exploration of risk in military operations. The Joint Force Commander (JFC) requires a better method for understanding, estimating, and communicating risk to ensure effective evaluation of potential hazards to operations.

Building on civilian literature, current U.S. and Allied doctrine, and historical case studies, this thesis proposes a lexicon to enable a more meaningful understanding of risk terminology and to create a baseline for understanding and communicating risk. In a similar manner, this thesis develops a mental model for risk analysis to help planners examine the strategic and operational environment and better estimate the risk to proposed military operations. This methodology is similar to other mental processes utilized in joint operation planning, and provides a sound basis for estimating risk. U.S. doctrine must change to provide essential guidance and tools to equip commanders and staffs to develop worthwhile risk assessments to inform seniors and subordinates alike. This thesis proposes methods and processes to reach that objective.

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The value of Professional Military Education derives not only from the courses and readings, but also through interaction with classmates and the constant exchange of ideas between peers. In my case, I am fortunate to have had the officers and civilian leaders of Seminar Two as my colleagues for this year. I am grateful for their patience, intellect, and perspectives, all of which will shape how I approach my remaining years of service.

DEDICATION

Although she requested otherwise, likely due to concerns relating to the literary quality of the writing, I dedicate this thesis to my wife and to our son. Her patience and his help made this document possible. I am extremely grateful for their sacrifice and encourage them to take up the sword against me if ever again I am tempted to take up the pen.

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CHAPTER 1: INTRODUCTION

War is a complex and violent event, fraught with risk. The 19th Century Prussian military theorist Carl von Clausewitz believed that military genius, as an attribute for identifying and mitigating risk, was a combination of many factors. Sadly, most of these factors depend more upon the commander's individual personality and character than his intellectual gifts.[1] Throughout history, some commanders have learned to accept risk and mitigate it, while others have misidentified or ignored risk and suffered the consequences, or allowed potential risk to paralyze their ability to make decisions. This haphazard process has often resulted in disaster. To paraphrase Clemenceau, military operations are too important to risk success or failure solely upon the quality of a commander's personality, character, and instinct. Intellect (or genius) must have a role, but by itself is insufficient. Unfortunately, today's military doctrine fails to compensate for the natural variance of genius that exists among commanders. It also fails to provide them with a process to focus the exploration of risk in military operations. Given the high cost of getting it wrong, the Joint Force Commander (JFC) requires a better method for understanding, estimating, and communicating risk to ensure effective evaluation of potential hazards to operations.

Strategists view risk as a negative outcome brought about by the mismatch between other variables in the strategic planning process.[2] As part of the strategic equation that includes ends, ways, and means, risk is often poorly or incompletely defined. Risk assessment is difficult. Unfortunately, current United States (U.S.) doctrine does not provide meaningful assistance to

[1] Christopher Bassford, *Clausewitz In English,* (Cary, NC: Oxford University Press, 1994), 53.

[2] Henry Bartlett, G. Paul Holman, and Timothy Somes, "The Art of Strategy and Force Planning," in *Strategy and Force Planning, Fourth Edition*,(Newport, RI: Naval War College Press, 2004), 21.

commanders and staffs attempting to define the risk of military operations. Senior military professionals must be able to provide counsel and advice to civilian leadership that enables them to make wise and informed decisions. Essential to this advice is a deep understanding of risk. Professionals must know how to both determine risk and how to articulate it appropriately to both superiors and subordinates. Understanding the risk of strategic decisions should rightly lead to a change in the desired ends, or the ways available to reach those end states. Accepting a degree of risk "balances" the strategic equation, but does not guarantee success. Strategically, the cost of getting risk "wrong" often results in a tragic loss of life as well as intangible damage to national credibility, wealth, power, and prestige.

Current U.S. doctrine focuses on risk primarily as a force protection and safety issue. Although doctrine does mention the need to develop branch plans and to consider risk in the course of action selection process, assessing and managing risk effectively requires more effort than doctrine currently describes.[3] Risk assessment is primarily an intellectual endeavor requiring the application of structure to both focus and bound it. Focused risk exploration is vital to ensure that plans account for risk impact, without engaging in fruitless discussions detracting from legitimate risk identification. This type of boundless discussion creates the potential for a risk averse mindset that inhibits development of effective courses of action.

To facilitate a baseline understanding of risk, Chapter Two of this paper reviews current civilian business literature and military doctrine on risk and risk management. Following this discussion, Chapter Three analyzes five historical case studies. Each case study includes a strategic overview and an operational summary designed to expose the key points essential to

[3] U.S. Joint Chiefs of Staff, *Joint Operations Planning,* Joint Publication 5-0, (Washington, D.C.: Joint Chiefs of Staff 11 Aug 2011), I-6.

understanding the impact of risk in the campaign. The Peninsula Campaign (1862), the Sioux Campaign (1876), Pearl Harbor (1941), and Midway (1942) provide examples of how risk entered into the strategic and operational picture. The final case study on the Battle of Chancellorsville (1863) explores the idea of risk versus what constitutes a military gamble. The Chancellorsville case study does not include a strategic overview, as the risk versus gamble case focuses on the operational level of war. Chapter Four distills the background information and the case study analysis into a mental model for considering risk and a lexicon for use in effectively communicating the outcome of risk analysis. Chapter Five concludes and recommends including the developed lexicon and risk analysis process in U.S. military doctrine.

The unrelenting operational tempo of warfare does not lend itself to a time consuming risk analysis. Doctrine must, but currently does not, provide commanders and planners with the methodology they need to conduct a thorough risk assessment under time constraints. Subordinate commands need to know where risk is acceptable to enable them to better develop the operational and tactical situation. Moreover, our civilian leadership demands a clear articulation of risk, beyond terms such as "low, medium, high, acceptable, or unacceptable." This paper combines historical research, analysis, and relevant business and allied military doctrine to draw out timeless ideas that can improve risk assessment methodology. This broad approach toward risk encourages a better assessment and articulation to enable senior leaders to make better decisions and, in turn, empower subordinates to operate in a dispersed and rapidly changing environment.

CHAPTER 2: BACKGROUND

"Critically, we must collectively promote a culture that embraces calculated risk as the means to generate opportunity."[1]

- General Martin E. Dempsey, U.S. Army

Answering GEN Dempsey's challenge to create a risk tolerant culture requires more than simply encouraging leaders to take risks. Leaders must assess the environment to understand the factors that influence possible courses of action and determine what realistic risks exist. To accomplish this, a leader must understand risk more deeply and thoroughly than the commonly accepted civilian or military definition. Leaders must think of risk as a factor that can enhance operational capability, but also one that requires close management to prevent disaster.

Risk, a term widely used in both civilian business literature and U.S. military doctrine, is simultaneously well defined, yet poorly understood. Despite numerous civilian and military explanations, this confused understanding of risk falls well short of defining the circumstances that Commanders must articulate when designing strategies and campaigns. Thus, it is vital to establish a baseline understanding of risk in civilian and military literature prior to exploring its impact on military campaigns.

Civilian Business Literature

It is important to note that this paper broadly discusses risk and risk management concepts. Therefore, this study eschews a detailed discussion of some elements of risk, such as financial risk management and the mathematics underpinning it, looking instead at how business attempts to manage risks generally, utilizing tools such as mathematical modeling, historical analysis, and diversification.

[1] Martin E.Dempsey, *Mission Command White Paper,* (Washington, D.C: Chairman of the Joint Chiefs of Staff, 3 April 2012),8.

Perhaps the best single volume exploration of risk in the financial world is Peter L. Bernstein's 1996 classic, *Against the Gods: The Remarkable Story of Risk*. Bernstein posits that the "boundary between modern times and the past is a mastery of risk: the notion that the future is more than a whim of the Gods, and that men and women are not passive before nature."[2] Defining risk as a choice that humans dare to make in spite of unknowable consequences, Bernstein describes a risk management environment that developed over thousands of years.[3] Acknowledging that financial markets lend themselves to detailed mathematical analysis due to their readily quantifiable nature, he develops the idea that two schools of risk managers exist. The first group contains managers who rely on mathematical models and complicated trading techniques to minimize risk. The second group consists of those who may utilize some mathematical tools, but who also attempt to mitigate the impact of events external to the market. These external events, called shocks, often have impacts on markets greater than the physical effects of the actual event.

Combining both schools, Bernstein advocates for utilization of analytical tools coupled with an understanding of the environment external to the marketplace. He cautions, however, that over-reliance on risk management techniques can create additional risks by encouraging a false sense of security and therefore a greater tolerance to risk than is prudent.[4] In light of the role of financial derivatives and mortgage-backed securities (both tools designed to mitigate risk) in the genesis of financial crisis of 2008, this conclusion seems prophetic.

Often used interchangeably within the area of finance, author Karen Horcher in her book, *Essentials of Financial Risk Management*, argues that the terms risk and exposure have a subtle

[2] Peter L. Bernstein, *Against the Gods: The Remarkable Story of Risk*, (New York: John Wiley and Sons, Inc., 1998), 1.

[3] Ibid, 8.

[4] Ibid, 335.

difference in meaning. Defining risk as the probability of loss and exposure as the possibility of loss, Horcher states that risk derives from exposure.[5] She states that there are three alternatives for managing risk: first, to do nothing and therefore accept all risks; second, to manage a portion of exposures by determining which elements can and should be mitigated; and, third, to manage all exposures.[6] Critical to management of financial risk is the concept of hedging. Defined as the use of financial securities with a negative return correlation to the primary investment, hedging reduces the overall exposure to a specific risk. In practice, hedging is buying additional securities that go up in value when the value of the primary investment goes down. By estimating the appropriate hedge, financial risk managers attempt to minimize the downside of exposure in specific investments.[7]

A review of documentation produced by investment firms clearly shows the emphasis on historical analysis to predict future outcomes. The Vanguard Group, for example, encourages investors to consider risk when constructing a portfolio. They define risk as a multi-dimensional concept that has implications within the environment as a whole (market risk) and the risk that the chosen investment strategy will fail to reach the investment goal (shortfall risk).[8] Inherent in this view of risk is a temporal nature; over time, the normal market cycle mitigates risk.

One way investment firms mitigate risk is through the use of market index funds. An index fund is a security that represents the value of an entire market (e.g. the New York Stock Exchange) to spread (diversify) the risk across the entire market. This technique is different from the purchase of a single stock, or a portfolio of shares from a specific industry. The

[5] Karen Horcher, *Essentials of Financial Risk Management*, (Hoboken, NJ: John Wiley & Sons, Inc., 2005), 1.

[6] Ibid, 7.

[7] Ibid, 6.

[8] Vanguard Investment Counseling & Research, "Vanguard's Investment Philosophy: We Believe #7," Vanguard Group Inc., https://global.vanguard.com/international/web/pdfs/webelieve7_042006.pdf , accessed on October 5, 2012.

analysis used to justify this approach is mathematical and based on historical data, which is therefore prone to the false sense of security identified by Bernstein. However, owning "a share of the entire market" mitigates the risk of attempting to pick stocks that outperform the market average. The tradeoff that those investors who adopt a time and diversity - based risk management strategy make is often a lack of participation in the sudden massive increases in wealth associated with investments in top performing stocks.[9] Many investors are willing to accept moderate investment returns in exchange for missing the sudden losses of wealth that a market collapse can bring. This sequence, known as the "boom/bust cycle," is apparent in historical analysis of markets. Investment professionals seek to utilize this knowledge of the boom/bust cycle combined with adequate diversification to reduce the risk of loss. The conundrum of risk management is the tradeoff between the massive reward that success in a volatile environment promises and the moderate progress found in a successfully risk-managed environment.

In *The Black Swan*, author Nassim Taleb provides a critical analysis of mathematically based financial risk management. Taleb defines a black swan as an event that lies outside normal expectations (an "outlier"), carries an extreme impact, and is only discernible after it occurs. He then states that the definition of risk used by most financial managers is actually a measure that excludes the impact of black swan events and is therefore of no predictive value.[10] Taleb advocates a model of risk management that acknowledges the chaos and randomness of the world, one that although unable to predict specific black swans, is rationally prepared to survive their occurrence.

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[9] John Downes and Jordan Goodman, *Dictionary of Finance and Investment Terms*, (Hauppauge, NY: Barron's Educational Series, Inc., 2010), Kindle E-Book.

[10] Nassim Taleb, *The Black Swan: The Impact of the Highly Improbable*, (New York: Random House Trade Paperbacks, 2010), xxii-xxiii.

Taleb's model requires positive action and high levels of situational awareness. In financial terms, this model dictates that an investment in a speculative business is less prone to a negative black swan. This is because the investor should know of the potential for negative volatility and adjust the amount he invests accordingly. The vulnerability to a black swan event increases when the investor perceives an investment to be safe. The investor increases his investment to the point where he risks a much larger percentage of his available capital, thus increasing the potential of loss during a black swan.

Taleb bases his distrust of mathematical forecasting of future events in part on the "Three Body Problem" developed by Henri Poincare´. In its essence this problem states that man can forecast a simple one on one interaction but as an environment becomes more crowded and complicated man requires more information to make accurate forecasts. Very quickly, the need for information outstrips the ability to collect and process it, rendering forecasts increasingly inaccurate.[11] Accordingly, Taleb rejects precise predictions; instead, he suggests understanding the *consequences* of an event (which can be determined) rather than its probability (which cannot be determined).[12] This approach argues for a broad based attitude of general preparedness for risk events, vice attempting to develop precise risk mitigation strategies for specific threats.

The business community is increasingly accepting of Taleb's concepts, especially in light of recent natural disasters and the financial crisis of 2008. Businesses are embracing a concept termed "Enterprise Risk Management" (ERM) that entails not only addressing financial risks, but also catastrophic events that hold the potential to deliver large-scale damages to a firm. The International Business Machine Corporation (IBM) estimates that the financial and legal aspects of a business accounts for less than 20% of all risk that results in capital declines for

[11] Taleb, 176-77.

[12] Ibid, 211.

corporations.[13] A staple of business practice for centuries, financial risk management strategies are essential to sound corporate management. In integrating these strategies, they have also ignored over 80% of all potential risks, clearly an unacceptable action for a responsible corporation. This dramatically illustrates the need to embrace "black swan" awareness in business.

To counter this gap, IBM argues for a risk management framework that differentiates between risks that are internal to corporations and those that are external events. Further segregated between controllable and uncontrollable risks and categorized into areas of endeavor (operational, financial, human capital, economic), the risks are then subject to detailed analysis. The final step of the process is to develop plans to mitigate the controllable risks and to prepare for the uncontrollable risks. Factors such as likeliness of occurrence, potential impact, and the cost of preparation feed directly into determining the priority of action. The essential outcomes of this process are key risk indicators that provide managers with decision controls to assist with implementation of risk management plans.[14]

Current risk management thought indicates a willingness to accept Taleb's ideas on the superiority of general preparedness over specific preparations. Nonetheless, there is not a discernible effort to eliminate the increasingly complex mathematical models used to manage and hedge risk. Indeed, most approaches to a broad based ERM model include financial and mathematical risk analysis as part of the overall program. The technique of combining different approaches to managing risk has implications for how the military should approach risk assessment and planning.

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[13] Spencer Lin, Carl Nordman, and Robert Torok, *Clearing the Clouds: Shining a light on Enterprise Risk Management* (Somers, NY: IBM Global Services, 2011), 2.

[14] Lin, Nordman, and Torok, 9-11.

Among humankind's myriad ventures, war is unique in its complexity, danger (to the individual and the state), and cost. Because of this, many theorists and practitioners discount drawing lessons from outside the military discipline. It is true that business decisions normally lack the life and death nature of military operations. Nevertheless, business is a complex and time critical world where the price of failure is extinction. Although not precisely applicable in all aspects, the body of risk analysis and management literature is far greater in the business world than in the military. Business concepts such as hedging, exposure, diversification, shortfall risk, and consequence preparation have a direct relation to military risk management. These concepts provide examples of how patterns of thought and action applied habitually can enhance risk management in high tempo environments such as military operations.

Current Military Doctrine

Unlike civilian literature, which encourages divergent viewpoints, military doctrine, and in particular U.S. military doctrine attempts to "enhance the operational effectiveness of joint forces by providing fundamental principles that guide the employment of US military forces toward a common objective."[15] Current U.S. military doctrine defines risk as, "Probability and severity of loss linked to hazards."[16] This definition combines the essential elements described in civilian literature as exposure with the idea of the impact (severity) of a risk event. In the U.S., military doctrine is the authoritative source for guidance, but commanders are encouraged to utilize judgment in its application.[17] The admonition to utilize judgment provides commanders and staffs with trade space to develop tactics, techniques, and procedures

[15] U.S. Joint Chiefs of Staff, *Doctrine for the Armed Forces of the United States*, Joint Publication 1, (Washington, D.C.: Joint Chiefs of Staff, 25 March 2013), I-1.

[16] U.S. Joint Chiefs of Staff, "DOD Dictionary of Military Terms," Joint Chiefs of Staff, http://www.dtic.mil/doctrine/dod_dictionary/data/r/6746.html (accessed 14 Nov 2012).

[17] U.S. Joint Chiefs of Staff, *Doctrine for the Armed Forces of the United States*, ii.

appropriate to their situation. Reflecting this philosophy, U.S. doctrine does not direct commanders to utilize a specific technique to assess or manage risk. This lack of specificity does not translate to a lack of emphasis on risk within U.S. doctrine. Key publications on intelligence, operations, and planning mention the importance of risk assessment and mitigation, but do so without providing useful guidance. Also lacking is guidance on the articulation of the risk assessment. Doctrine focuses on estimating likelihood and significance of specific risks, specifically the most dangerous or most likely events.[18]

The U.S. military recognizes risk as a major factor in strategic planning. As required by law, the Chairman of the Joint Chiefs of Staff (CJCS) annually submits to Congress, a comprehensive assessment of the risk associated with executing the current National Military Strategy (NMS). Known as the Chairman's Risk Assessment (CRA), this document is just the first of several directed risk analyses throughout all levels of the Joint Strategic Planning System (JSPS) and the Joint Operational Planning and Execution System (JOPES).[19] Beyond directing the CJCS to submit this annual assessment, there is no additional guidance on methodology or content. Presumably, this provides the staff with the ability to develop its assessment based on the current strategic environment; however, the lack of methodology or framework may inhibit continuity from year to year.

At the operational level of war, Joint Publication 3-0, *Joint Operations* (JP 3-0) provides the overarching construct for the conduct of U.S. joint military operations.[20] JP 3-0 defines risk as the chance of failure or unacceptable results and identifies risk as one of the *four essential*

[18] U.S. Joint Chiefs of Staff, *Joint Operations Planning*, Joint Publication 5-0, (Washington, D.C.: Joint Chiefs of Staff 11 Aug 2011), B-3.

[19] U.S. Joint Chiefs of Staff, *Joint Strategic Planning System*, Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3100.01B, (Washington, D.C.: Joint Chiefs of Staff, 12 Dec 2008), F-15.

[20] U.S. Joint Chiefs of Staff, *Joint Operations*, Joint Publication 3-0, (Washington, D.C.: Joint Chiefs of Staff, 11 Aug 2011), i.

questions that operational art requires commanders to answer.[21] This definition differs from the one provided in the Department of Defense (DOD) "DOD Dictionary of Military Terms." This divergence in definitions shows tension between a conceptual view of risk as a safety issue (JP-1), and risk as an operational and strategic factor (JP 3-0). Significantly, JP 3-0 mentions risk over 50 times in its text, and on several occasions highlights the essential nature of accurate risk assessment and mitigation as a function of command and control during joint operations. However, the actual text does not reflect that emphasis, with less than one page out of 204 devoted to a specific discussion of operational risk assessment and mitigation.[22] Much of this short section is devoted to safety and the establishment of risk management programs to reduce mishaps and their resultant injuries and deaths. Accident prevention is an essential part of a command's risk management program; but it is a small and insignificant part of a strategic or operational commander's planning calculus for combat operations.

Joint Publication 5-0 specifically tasks JFCs to provide risk assessments and mitigation plans as part of the planning process.

> Assessing risk and identifying mitigation strategies are fundamental to joint operation planning. In the course of developing multiple options to meet the strategic end state, JFCs and their planning staffs, as well as the larger Joint Planning and Execution Community (JPEC), identify and communicate shortfalls in Department of Defenses' (DOD's) ability to resource, execute, and sustain the military operations contained in the plan as well as the necessary actions to reduce, control, or accept risk with knowledge of potential consequences. JFCs communicate risk to senior leadership during in-progress reviews (IPRs) of the plan.[23]

JFCs provide this risk assessment to the Secretary of Defense (SECDEF) and the CJCS who include their input in the annual CRA. In response to the high level input on risk that JFCs

[21] U.S. Joint Chiefs of Staff, *Joint Operations*, Joint Publication 3-0, II-4. (emphasis added)

[22] Ibid, III-14-15.

[23] U.S. Joint Chiefs of Staff, *Joint Operations Planning*, Joint Publication 5-0, I-2.

provide, JP 5-0 provides commanders and staffs with a mere three paragraphs of guidance to assist in development of a risk assessment. These paragraphs instruct planners to "identify the obstacles or actions that may preclude mission accomplishment and then assess the impact of these hazards to the mission."[24] JP 5-0 directs planners to determine the probability of occurrence and the severity to the mission upon event occurrence to determine the overall level of risk. However, it offers no method to determine these levels or technique to combine the probability and severity into a definable metric.

For all of its limitations, JP 5-0 does recognize risk assessment as an essential part of the planning process. Listed as a step in the mission analysis process of the Joint Operation Planning Process (JOPP), a statement of acceptable risk is included in the initial commander's intent statement. During course of action development, a risk assessment is an essential criteria needed to compare and evaluate various courses of action. Upon selection of a course of action, the commander should include a statement of acceptable risk and use it in communication with the SECDEF.[25]

As Joint Publications 1, 3-0, and 5-0 indicate, U.S. doctrine embraces the idea that risk is an inherent aspect of warfare. They do this, however, without providing any significant guidance on how to approach assessing risk, mitigate its potential effects, much less frame thought, or discuss it with superiors or subordinates. More troubling is the divergent definitions of risk between JP-1 and JP 3-0, and the inadequacy of both.

This problem does not occur in the armed forces of the United Kingdom (U.K.), one of America's most professional and ardent strategic allies. Defining military risk as, "the probability and implications of an activity or event, of potentially substantive positive or

[24] U.S. Joint Chiefs of Staff, *Joint Operations Planning*, IV-11.

[25] Ibid, IV-4 – IV-42.

negative consequences, taking place,"[26] the British encourage commanders to assess their own attitudes toward risk as well as that of their staff and other actors. Specifically, British military doctrine encourages commanders and staffs to avoid the following bias tendencies when considering risk:

> 1) Confirmation Bias – Accepting or weighing more heavily information that confirms assumptions or beliefs ahead of information that challenges those beliefs.
> 2) Giving weight to information that is more readily accessible.
> 3) Believing that circumstances that are impossible to control are controllable based on factors such as previous success or lack of reflection.[27]

The British definition of military risk adds to the concept of risk through the addition of the potential of a positive outcome to a risk event. Terming positive outcomes of risk events as opportunities and negative outcomes as threats, this addition allows commanders to consider the spectrum of possible outcomes. This technique is useful when considering potential risk events that influence both friendly and adversary forces, such as weather or third party intervention in conflict. By including the possibility of a positive outcome, planners can develop indicators and warnings that enable agile decision making before and during "mutual risk events" and facilitate exploitation of opportunities as they appear.[28]

In comparison to U.S. doctrine, which provides planners with a picture of a notional safety focused risk management process, the British provide a detailed methodology for planners to analyze and manage risk at the operational level of war. U.K. Joint Doctrine Publication 5-00, *Campaign Planning*, develops a model that incorporates analysis and management into a single, iterative process. This model includes four steps: identify, assess, plan, and manage. Identify

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[26] U.K. Ministry of Defence, *Campaigning*, Joint Doctrine Publication 01, (Swindon, Wiltshire, U.K.: Ministry of Defence, Dec 2008), 4-16.

[27] Ibid, 4-16.

[28] U.K. Ministry of Defence, *Campaign Planning*, Joint Doctrine Publication 5-00, (Swindon, Wiltshire, U.K.: Ministry of Defence, Dec 2008), 2H1-1.

and assess fall into the analysis category, while plan and manage are in the management category.[29]

In a similar manner to the U.S. approach, British doctrine directs planners to begin the identification process at the outset of planning during initial mission analysis. Identification and assessment continues through course of action development, enhanced with matrix analysis to grasp the likelihood and impact of risk events. Central to this process is the determination of risk ownership. Based on the idea that the level of command most impacted by a risk event should own the management plan for that specific risk, risk ownership is another novel contribution to military risk theory.[30]

As planners move from assessment to planning, prioritization of valid risks occurs to allow development of management plans to mitigate the most severe risks first. According to U.K. doctrine, a commander may deal with risk in four ways:

> 1) Terminate – Removal of the risk by either changing the plan to eliminate the possibility of the risk or by treatment of the risk to the point the risk no longer represents a threat.
> 2) Treat – Reduction of the impact of the risk through contingency planning, development of indicators and warnings (Commander's Critical Information Requirements (CCIRs)) to assist decision making or changing the base plan.
> 3) Tolerate – A commander may decide to accept the risk without treatment.
> 4) Transfer – In the event a risk cannot be treated or tolerated, a commander may attempt to transfer the risk to a higher commander or a partner, or both.[31]

As operations move from planning to execution, the British process moves to management, which hinges on communication with subordinate commands to ensure understanding of the management plan. Successful execution of risk management demands acceptance of risk ownership and clearly understood indicators and warnings of risk events.

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[29] U.K. Ministry of Defence, *Campaign Planning*, Joint Doctrine Publication 5-00, 2H1-1.

[30] Ibid, 2H-4.

[31] Ibid, 2H1-5.

Indicators and warnings provide commanders with decision points to implement management plans or initiate branches to the base operations plan. Throughout operations, constant review of the risk analysis and management plan occurs to ensure proper mitigation of risk given the current situation.[32]

The body of risk literature spans the spectrum from mathematical analysis of historical data to theory advocating abandonment of predictive models in favor of non-specific preparation for common effects of risk events. Within that spectrum, military doctrine acknowledges the risk inherent in warfare, while advocating a methodical analysis to both prevent disaster and risk induced decision paralysis. However, U.S. doctrine does not provide a proposed methodology to conduct this analysis, or any objective standard for determining a "high, medium, or low" probability of occurrence or impact. In leaving method to the practitioner, U.S. doctrine creates a wide gap for interpretation that can lead to variance between commanders in determining which risks are acceptable and which are not. This type of interpretation gap creates confusion, not only within military organizations, but also between military and civilian leadership.

The intent of this chapter was to build a baseline understanding of the current body of thought on risk. The next section builds on this understanding and explores various campaigns from American military history to determine how previous commanders have dealt with risk. From that study, distillation of lessons learned enables formation of a mental model to improve the current U.S. military risk analysis process.

[32] U.K. Ministry of Defence, *Campaign Planning*, Joint Doctrine Publication 5-00, 2H1-6.

CHAPTER 3: CASE STUDIES

Historical case studies are useful because they provide examples of how commanders and planners understood the risk inherent in their operations. By conducting a "risk-centric" review of case studies while utilizing the understanding of the concept of risk developed previously, this thesis develops an approach for understanding and articulating risk. As U.S. Marine Corps Lieutenant General Paul K. Van Riper wrote:

> History offers no "lessons" for military officers. It does, though, provide a rich context for understanding the terrible phenomenon that was, is, and will remain war. The vicarious experiences provided through study of the past enable practitioners of war to see familiar patterns of activity and to develop more quickly potential solutions to tactical and operational problems.[1]

Although the idea of a formalized risk management process is a modern concept, commanders throughout history have attempted to identify and mitigate risk. Through a comparison of plans with their actual outcomes, a useful framework for the analysis of risk in future operations as well as ideas on how to identify potential sources of risk emerges. The goal of this analysis is not to criticize or denigrate the performance of the people involved. Rather, the goal is to further the current understanding of risk and harvest the lessons learned by those who have gone before.

The difficulty in analyzing historic campaigns to distill lessons for today is that a strict application of modern standards dilutes the challenges posed by the environment in which the campaign occurred. Clausewitz encouraged the study of battles and campaigns in their entirety. Presumably, this is so the student may develop an appreciation for the perspective of the

[1] Paul K. Van Riper, "The Relevance of History to the Military Profession: an American Marine's View," In *Past as Prologue: The Importance of History to the Military Profession* (Cambridge, U.K.: Cambridge University Press, 2006), 39.

commander, and gain true insight into the rationale behind specific decisions and actions. Space and time limitations precluded the author from meeting this Clausewitzian standard; readers may consult the bibliography for suggested reading if their intellectual curiosity demands further inquiry. Each case study contains a synopsis of the strategic situation, an overview of the operational plan for the campaign, and a summary of the key points relating to risk assessment, mitigation, and articulation. The Chancellorsville case study omits the strategic summary as it focuses on understanding the difference between accepting risk and gambling. Detailed tactical summaries of the campaigns and battles are not included, except as they specifically relate to risk.

Case Study: McClellan and the Early Peninsula Campaign, 1862

Strategic Overview: After the shocking defeat of U.S. forces at the First Battle of Manassas in July 1861, President Abraham Lincoln, appointed Major General (MG) George B. McClellan as commander of Union forces defending Washington.[2] McClellan organized and trained the growing army and named it the "Army of the Potomac," a name that would come to symbolize the primary Union force conducting operations in the Eastern Theater throughout the war.[3] Despite McClellan's expertise at training and organizing, President Lincoln would soon become frustrated with his hesitation to commit the army to battle.

As the winter of 1861-62 progressed, frustration within the administration rose due to McClellan's failure to follow through on his promise of aggressive action against rebel forces. Confederate forces emplaced artillery batteries along the banks of the Potomac and succeeded in

[2] For purposes of clarity, the use of the terms U.S., Northern, Army of the Potomac or Union refers to forces or persons loyal to the Constitution of the United States. Likewise, the terms C.S.A., Southern, Confederate, Army of Northern Virginia or Rebel refers to forces or persons loyal to the Confederate States of America, and in armed revolt against the United States.

[3] Joseph B. Cullen, *The Peninsula Campaign 1862*,(New York: Bonanza Books, 1973), 22.

imposing a partial blockade of Washington, D.C. Their presence stopped commercial traffic along the river and served as a physical reminder of Union impotence against the Confederacy.[4] Despite several victories in the Western Theaters, the continued presence of an active Confederate Army within a day's march of the Union Capital was intolerable politically for the Lincoln Administration. So unbearable was this threat to Washington that a frustrated President assembled his own council of advisors and devised a plan of action that he subsequently ordered McClellan to carry out.[5] Rather than accept the President's plan, McClellan proposed a bold amphibious strike utilizing naval power to move a large force south along the Chesapeake Bay and up the Rappahannock River to Urbanna, VA. From Urbanna, he would march toward Richmond and fight the Confederates in a decisive battle that would defeat the enemy in the East and lead to the fall of the Confederate capital in Richmond. (At this time, and throughout the war, the capture of the Confederate capital city was the strategic objective of the Union Army.)[6]

McClellan's plan appeared to be a bold attempt to utilize the North's strategic mobility gained by its dominance at sea to break the deadlock around Washington. Advocates of quick direct action favored a direct route over land to Richmond, a route that required multiple river crossings as well as attacking into the strength of the Confederate Army. If executed in a rapid and expert manner, an amphibious end run around this potential killing ground could result in the fall of Richmond and the early end to the war.

McClellan used intelligence reports citing a large number of Confederate forces near Washington to bolster his requests for increasing the strength of the Army of the Potomac and to justify his continued inactivity. Upon proposing the Urbanna operation to the President, he

[4] Stephen W. Sears, *To the Gates of Richmond: The Peninsula Campaign*, (New York: Ticknor & Fields, 1992), 4.
[5] Ibid, 11.
[6] Ibid., 10.

sought to maximize the strength of the force that would conduct this operation. This created a situation in which the President, fearful of such a large force within range of Washington, had to mitigate the risk to the Capital. He did so by specifically directing McClellan to clear the Potomac of Confederate artillery and to leave enough forces to secure Washington.[7] The requirement to ensure the security of Washington would later become an issue to McClellan, as he felt the policy had greatly diminished his combat power. Later, when a further reduction of his force occurred due to enemy action in the Shenandoah Valley, McClellan would rage that the requirement to defend the Capital was the "fatal error" of the campaign, and denied him the ability to execute his plan for "rapid and brilliant operations."[8]

After receiving approval for the operation from the President, McClellan began preparations for this large amphibious undertaking. The sudden effort indicated to the Confederacy that there was a threat to Richmond. In response to this development, the Confederate government ordered the Army near Manassas, VA to move to the defense of Richmond. This movement made the planned Urbanna operation untenable as the landings might face opposition; although moving via sea, the Union Army did not have a forcible entry capability. Prudently, McClellan changed his planned landing site to Ft Monroe, VA, and intended to use the York River as his line of communications.[9] Further complicating matters was the appearance of the Confederate Ironclad *Virginia* in the waters around Ft Monroe. The situation resolved with the arrival of the Union Ironclad *Monitor*, and after a single inconclusive battle, the area was secure for landing operations.

[7] Sears, *To the Gates of Richmond: The Peninsula Campaign*, 8.

[8] Ibid, 41.

[9] Cullen, *The Peninsula Campaign 1862*,(New York: Bonanza Books, 1973), 30.

Finally, on 2 April 1862, over eight months after he began to build the Army of the Potomac, McClellan established its headquarters at Ft Monroe. The next day, he began the movement of forces up the Virginia peninsula toward Richmond. For this campaign, he assembled the largest army yet in service in North America. Initially made up of three corps of ten divisions, including heavy artillery, engineers, cavalry, and aerial observation balloons, the Army of the Potomac totaled over 66,000 men.[10]

Operational Summary: Upon taking the field, McClellan began to move up the peninsula almost immediately. It was not a long march, however, and within four days of arrival on the peninsula, he stopped the army to lay siege to Confederate forces around Yorktown (Map 1). Despite initially having accurate intelligence of the true numbers of enemy forces confronting the army, he failed to seize the initiative to sweep a much smaller force from the field. It is at this point that McClellan began to pursue a risk averse course of action.[11] This course of action, fueled by inflated enemy strength reports provided to him by private detective Allan Pinkerton, was a non-aggressive and methodical approach to what had been an aggressive strike at the enemy capital.[12]

Once the Army of the Potomac stopped at Yorktown, the Confederate Army took advantage of the Union hesitance to reinforce the Peninsula. The Confederates moved troops from around Virginia to protect their capital. Over the course of the next month, the Union methodically built trenches and installed heavy artillery, while the Confederate commander, General (GEN) Joseph E. Johnston, built up his force. Upon completion of the Union siege

[10] Sears, *To the Gates of Richmond: The Peninsula Campaign*, 35.

[11] McClellan's acceptance of inflated enemey strength reports seemingly without question fed his hesitence to undertake offensive action, and increased his reliance on a methodical approach vice the promised rapid manuever.

[12] Patrick Sweeney, "Risk—The Operational Edge in the Peninsula Campaign of 1862," (Ft Leavenworth, KS: School of Advanced Military Studies, 1988), 8.

works at Yorktown, Johnston quickly withdrew his forces from the area. McClellan's reluctance to attack quickly provided the enemy with an additional month to build up forces for the coming battles around Richmond.

After the fall of Yorktown on 4 May 1862 and the subsequent Battle of Williamsburg, Johnston again withdrew towards Richmond. His goal in this fighting withdrawal was to prevent another Union amphibious movement up river, which would place the Union between his army and Richmond. His concern was unnecessary, for although the Union Navy proposed using gunboats to force the batteries on the James and land forces beyond to directly assault Richmond, the ever-cautious McClellan delayed providing the required land forces.[13] The James provided a natural route to the gates of Richmond, and a shorter overland supply route for the Union Army (Map 1). McClellan never shifted his line of communication from the York River, despite the Navy's belief that they could force the James River.

Map 1 - Peninsula Campaign[14]

[13] Joseph B. Cullen, *The Peninsula Campaign 1862*,(New York: Bonanza Books, 1973), 48.

[14] Civil War Trust, "The Peninsula Campaign of 1862," Civil War Trust, http://www.civilwar.org/maps/peninsula-campaign/peninsulacampaignmap.html (accessed 13 February 2013).

Throughout May, the Army of the Potomac continued is methodical advance up the peninsula, fighting mud, swamps, and disease as well as occasional skirmishes with the withdrawing Confederates. At this point in the campaign, the Army of the Potomac had swollen to over 102,000 effectives.[15] By 24 May, the enlarged army reached the Chickahominy River, a point five miles from Richmond. McClellan's plan was not to attack the city directly, as his extreme over estimation of enemy strength fed his belief that he was outnumbered. Instead, he planned to lay siege to the city. As McClellan waited on the banks of the Chickahominy for additional reinforcements (an additional 41,000 troops under MG Irwin McDowell), Confederate Lieutenant General (LTG) Thomas J. "Stonewall" Jackson began his Valley Campaign. The Valley Campaign changed the strategic environment for the Army of the Potomac. Because of Jackson's rapid defeat of Union forces in the Shenandoah Valley of Western Virginia, and the subsequent threat to Washington, President Lincoln recalled McDowell to defend the city.[16] Despite the recall, McClellan went ahead with a methodical approach toward securing his flanks, establishing crossing sites on the Chickahominy, and preparing for the planned siege. By 30 May, he had parts of two of his Corps across the river, and therefore effectively isolated from the bulk of his force.

GEN Johnston seized the opportunity provided by the position of the Army of the Potomac astride the Chickahominy and attacked the weaker side, south of the river. A confused and violent two-day battle commenced on 31 May at Seven Pines, VA. The attack did not prove ultimately successful for either side, with casualties greater on the Confederate side and the Union retaining the field. The Confederate attack failed to destroy the isolated Union Corps and

[15] Cullen, *The Peninsula Campaign 1862*,(New York: Bonanza Books, 1973), 50.

[16] Sears, *To the Gates of Richmond: The Peninsula Campaign*, 110.

resulted in the serious wounding of GEN Johnston.[17] Perhaps the most important outcome of the battle to the campaign was the elevation of GEN Robert E. Lee to the command of the Army of Northern Virginia.

During the next month, McClellan waited along the Chickahominy completing what he viewed as vital engineering projects to improve his supply lines from the York River. During this time, Lee began to formulate the strategy that would stop the lethargic Union advance. Recognizing he that was outnumbered and that allowing the Union forces to consolidate and entrench around Richmond would remove maneuver from the campaign, Lee sought to draw McClellan from his lines and engage in battle away from his heavy guns.[18] After securing reinforcements in the form of Jackson's Valley Army, Lee initiated a series of battles that indeed stopped the Union advance toward Richmond, and forced the eventual withdrawal of the Army of the Potomac from the peninsula.

The battles of Oak Grove, Beaver Dam Creek, Gaines Mill, Savage Station, Glendale, and Malvern Hill, collectively known as the Seven Days Battles, occurred in the period 25 June to 1 July 1862.[19] These battles built Lee's reputation as a commander, and because of the impact of the losses on both sides, hardened each side's resolve to pursue the war. Although not decisively defeated in these battles, and in fact winning the final battle overwhelmingly, McClellan decided to retreat down the peninsula, and of course, await reinforcements. Elements of the Army of the Potomac lingered on the peninsula for several additional weeks, but the campaign was essentially over after Malvern Hill. Richmond would remain the Confederate

[17] Sears, *To the Gates of Richmond: The Peninsula Campaign*,144-45.

[18] Matt Spruill III and Matt Spruill IV, *Echoes of Thunder: A Guide to the Seven Days Battles,* (Knoxville, TN: The University of Tennesee Press, 2006), 7.

[19] Ibid., xxii.

capital for another three years. The Peninsula Campaign caused the loss of over 15,000 Union men killed, wounded, and captured, as well as total Confederate losses of over 20,000.[20]

Risk Appraisal: McClellan planned a bold strike at the heart of the enemy nation. Reminiscent of the landing of American forces ashore at Vera Cruz, Mexico during the Mexican War, this Campaign held the promise of a decisive battle and rapid final defeat of the Confederacy. Amphibious operations are fraught with risk, as by their very nature they require the landing force to secure a base, force logistics to move over the shore, and often strain the limits of the supporting naval force to maintain security of the sea line of communication. With that risk, comes the potential of great payoff, as was the case with both Vera Cruz and Inchon, Korea during the Korean War. Unfortunately for the Union Army, McClellan was unable to capitalize on the risk he had knowingly accepted during the Peninsula Campaign.

McClellan chose to execute a campaign best described as methodical. He believed intelligence reports that greatly inflated enemy strengths and used these reports to justify his lethargy. Early in the campaign, he chose to establish a classic siege at Yorktown rather than accept the accurate estimate of enemy strength. This delay provided Confederate forces with time to prepare a strategy for the defense of Richmond and move forces from throughout Virginia to meet him. McClellan gave excessive weight to information that was more readily available without subjecting it to rational analysis. This tendency to overweight these reports fed his natural propensity towards caution and inhibited his ability to take advantage of the opportunity his initial boldness presented.[21]

[20] Spruill III and Spruill IV, *Echoes of Thunder: A Guide to the Seven Days Battles*, 308.

[21] Authors such as Patrick Sweeney speculate that McClellan lacked confidence in the ability of his army to conduct the complicated operations he envisioned, which contributed to his risk aversion.

After Yorktown, his cautious nature and fixation on relative combat power again blocked his ability to see past the risk of continuing to strike boldly. After designing and executing the largest amphibious movement to date in American history, he refused to support the Navy's plan to use the James River to bring his army to the gates of Richmond. McClellan sought to restore maneuver to the war by eliminating the river obstacles of Northern Virginia, but refused to do the same on the peninsula. Compounding this error, he even refused to move his supply base to the James, eliminating the need to maintain large numbers of forces north of the Chickahominy River.

President Lincoln identified the security of Washington as essential to the Union cause. He was unwilling to accept the risk of leaving the Capital virtually unguarded to maximize the forces available to McClellan. President Lincoln recognized that a successful Confederate raid on Washington could have devastating consequences to the Union war effort. Further, he knew that the Union could recover from a defeat on the Peninsula. President Lincoln acted at the strategic level to transfer risk from the defense of Washington to the Army of the Potomac. In his judgment, the risk posed by reducing the already overwhelming force assembled by one corps paled in comparison to the risk of not guarding Washington.

Colin Gray wrote that, "The most attractive way to improve the odds is to strike by surprise, and then to keep the military and strategic initiative thus seized."[22] A commander, who can visualize a bold strike to the enemy's heart, must accept the risk associated with placing forces in potential isolation. McClellan had the vision to avoid the network of rivers and obstacles on the direct overland route from Washington to Richmond. He had the flexibility to shift landing sites when the tactical situation changed prior to landing. He then attempted to

[22] Colin Gray, *Fighting Talk: Forty Maxims on War, Peace and Strategy* (, Dulles, VA: Potomac Books, Inc., 2009), 41.

wage a risk free campaign by building an overwhelming force, improving supply lines with massive engineering projects, and neglecting to maneuver. He lost the strategic initiative he gained by placing a force of 100,000 men so close to the objective. By accepting worst-case intelligence estimates, seemingly without question, he allowed the risks he identified to paralyze his army. He surrendered the initiative within four days of landing by initiating the siege at Yorktown. From that point, Confederate forces, although truly outnumbered, had the initiative.

Case Study: The Sioux Campaign, 1876

Strategic Overview: The discovery of gold in the Black Hills of the Dakota Territory in 1874 created pressure on the U.S. government to open the Indian Territory for further westward expansion.[23] For the scandal-plagued administration of President Ulysses S. Grant, holding back the onrush of miners and settlers was a politically untenable position. Further, the government, still in fiscal distress from the financial panic of 1873, looked on a new gold strike as a potential windfall to its coffers.[24] The roadblock to the desired expansion was the Fort Laramie Treaty of 1868, which created the Great Sioux Reservation in the Dakota Territory west of the Missouri River and included a provision for hunting and migratory rights in the Yellowstone and Powder River areas (referred to as "unceded territory").[25]

The Fort Laramie Treaty succeeded in reducing the intense violence of 1865-8 throughout the Dakota Territory. During that period, battles with names such as Fetterman's Fight and the Wagon Box Fight cost U.S. forces over a hundred men killed, and displayed the

[23] The Dakota Territory encompassed parts of present day South Dakota, North Dakota, Montana, and Wyoming. Fought across this vast terrian, the majority of the battles of the Sioux Campaign occurred in modern day Montana and Wyoming.

[24] James Donovan, *A Terrible Glory: Custer and the Little Bighorn, the Last Great Battle of the American West*, (New York, NY: Little, Brown and Company, 2008), Kindle E-Book, Chapter 1.

[25] Ibid., Kindle E-Book, Chapter 1.

ferocity and skill with which the various Sioux tribes fought. The tiny frontier army, although stocked with combat veterans from the Civil War, was insufficient in size to control the vast Northern Plains. By signing the Ft Laramie treaty, the U.S. Government was both acknowledging its inability to force the various Sioux tribes onto a traditional reservation, and enabling the Army to concentrate on controlling the Indian tribes of the Southwest. Initially the treaty was a success, with incidents of violence between army forces and Indians in the Dakota Territory plummeting over the next several years.[26]

In an attempt to maintain the peace, while allowing western expansion into the Black Hills, President Grant offered the Sioux signatories to the treaty a "buyout." The buyout contained a financial settlement and continued support of smaller reservations, in exchange for the Sioux tribes ceding large tracts of land in the Dakota Territory, including the Black Hills and buffalo migration areas around the Yellowstone and Powder Rivers. The Sioux tribes declined the offer.[27] In response, President Grant directed the Army to stop blocking settler encroachment into the Dakota Territory and delivered an ultimatum to the Sioux bands residing off the reservations in the unceded territory. The Sioux were to leave their hunting grounds forever and arrive on the Great Sioux Reservation by 31 January 1876. Failure to do so would result in the Army undertaking military operations to force compliance.[28] Multiple tribes, of various heritages, refused this order. The largest of these tribes were the Sioux and Cheyenne, under the primary leadership of the Chiefs Gall, Sitting Bull, and Crazy Horse.

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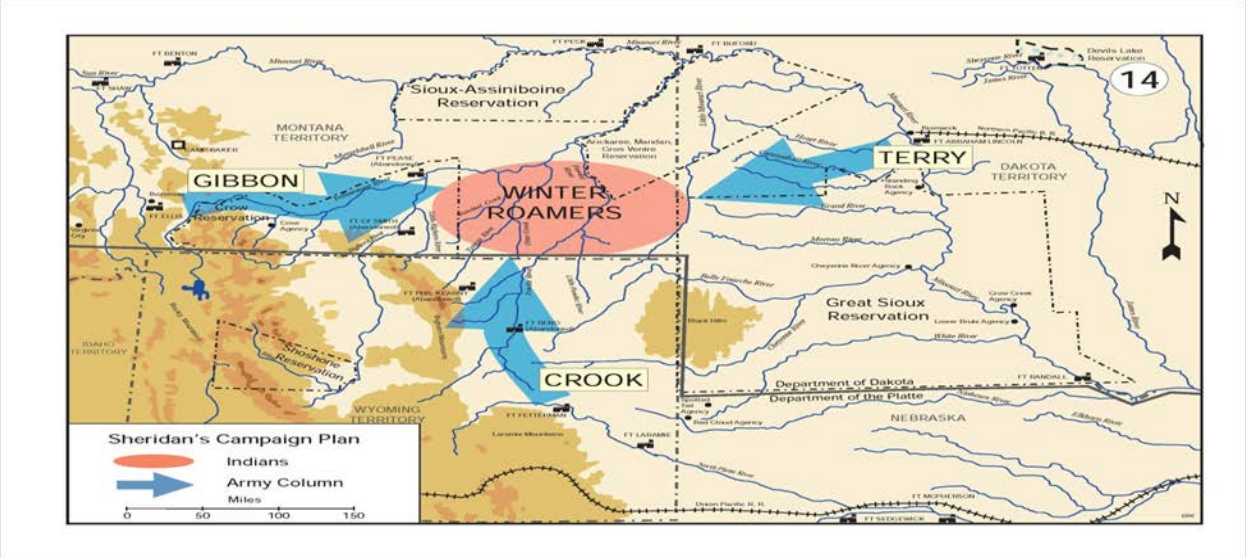
[26] Gregory F.Michino, *Encyclopedia of Indian Wars: Western Battles and Skirmishes 1850 – 1890,* (Missoula, MT: Mountain Press Publishing Co., 2003), 368.

[27] Donovan, *A Terrible Glory: Custer and the Little Bighorn, the Last Great Battle of the American West,* Kindle E-Book, Chapter 1.

[28] Ibid., Kindle E-Book, Chapter 1.

Operational Summary: The Commander of the Military Division of the Missouri, Lieutenant General Phillip H. Sheridan, U.S. Army, planned a winter campaign to force Sioux compliance with the Presidential order. Sheridan envisioned employment of his forces against the Sioux at the peak of the Northern Plains winter, taking advantage of the reduced mobility of the nomadic tribes brought on by the fierce winter weather.[29] Sheridan directed that separate columns from the subordinate Departments of the Dakota, Platte, and the Missouri converge on the unceded territory from three directions to locate and destroy the hostile tribes (Map 2).



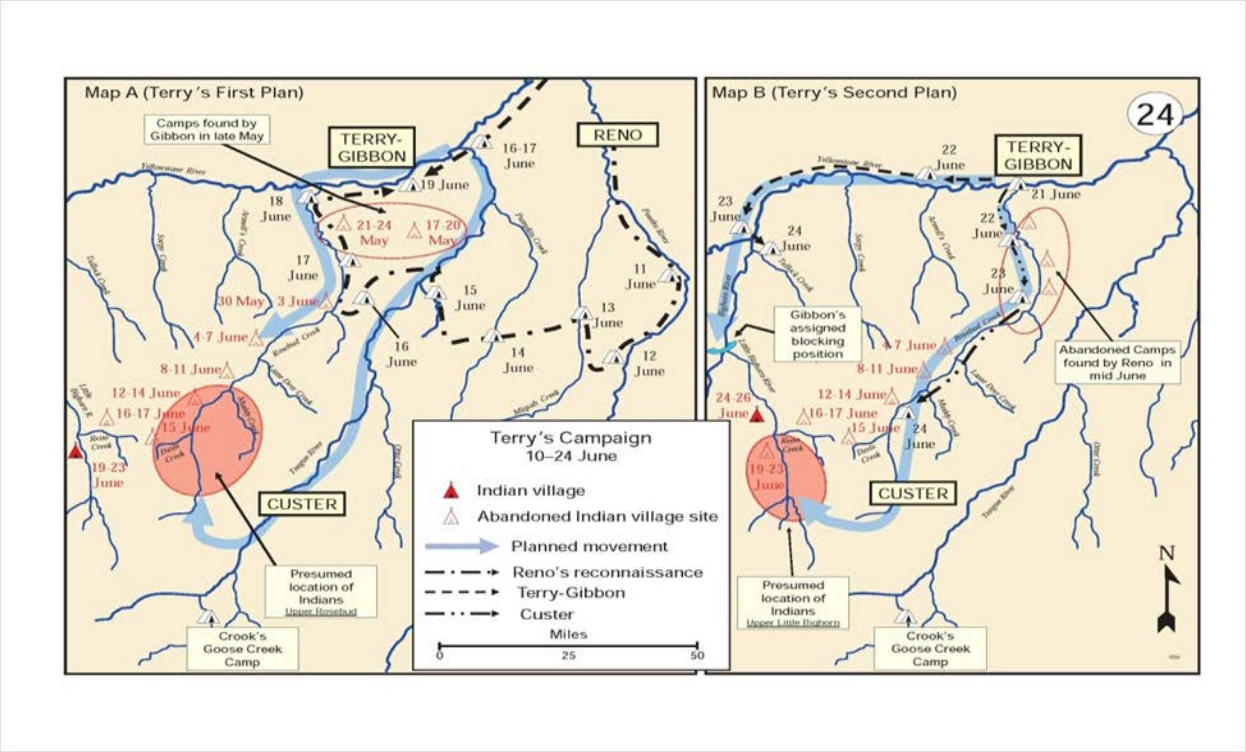
Map 2 - Sheridan's Campaign Plan[30]

Delayed by extreme winter weather, the initial movements into the territory were uncoordinated. The element from the Department of the Platte, under Brigadier General (BG) George Crook, began moving north into the unceded territory on 1 March 1876. This initial push resulted in the first battle of the campaign on 17 March 1876. Colonel (COL) Joseph Reynolds, leading elements of the 3d U.S. Cavalry, fought an inconclusive battle along the Powder River

[29] Joseph Wheelan, *Terrible Swift Sword, The Life of General Phillip H. Sheridan*,(Cambridge, MA: De Capo Press, 2012), 276.

[30] Charles D.Collins, *Atlas of the Sioux War, (*Fort Leavenworth, KS: Combat Studies Institute Press, 2006), 43.

against a combined Sioux - Cheyenne group. Due to both the battle and the weather, Crook ordered his force to return to its garrison in Wyoming to prepare for further operations.[31]



Map 3 - Terry's Campaign Plans[32]

In early April 1876, COL John Gibbon, as part of the Department of the Dakota under BG Alfred M. Terry, marched his mixed infantry and cavalry force (450 troops) along the Yellowstone River and failed to make contact with any hostile Indians, although his scouts did detect signs of Indian villages and movement along the Yellowstone River in mid-May. On 17 May, Terry, and the main body of the Department of the Dakota (925 troops), including the 7th U.S. Cavalry, departed Fort Abraham Lincoln and marched west into the unceded territory. On 29 May, once again departing garrisons in Wyoming, Crook led his force of over 1,000 troops north to the area of the Tongue and Rosebud Rivers.[33] Although this movement of nearly 2,300

[31] Collins, *Atlas of the Sioux War*, 46.

[32] Ibid., 63.

[33] Ibid., 48.

troops in three columns appears coordinated, in reality, upon departure from established garrisons, communications between the columns was minimal and slow.

In early June, BG Crook detected signs of Indian movement along his route. Based on reports from his scouts that indicated the presence of a large village near the Rosebud River, he established a supply base on the Tongue River, and continued the march with minimal field rations and ammunition. Crook found the Sioux and Cheyenne village on 17 June 1876, and was promptly attacked. Known as the Battle of the Rosebud, it raged for nearly six hours and although Crook claimed the victory, his losses, coupled with his need for resupply, forced his retreat from the Rosebud and quick return to his base on the Tongue, where he remained for the next seven weeks.[34] Although Crook promptly reported the news of the battle and the ferocity with which the Indians had fought to GEN Sheridan, BG Terry, in the field to the east, did not receive word of the fight until 30 June 1876.[35]

Since departing garrison on 17 May, Terry and his command had limited contact with any other force or headquarters. Establishing contact with Gibbon's force in early June, Terry consolidated with Gibbon along the Yellowstone River and directed elements of the 7th Cavalry to scout the upper Tongue and Rosebud Rivers. His initial plan was for the two columns to move along the Rosebud and Tongue Rivers. Upon the return of the scouting party, Terry revised his plan to trap the Sioux and Cheyenne along the upper portion of Little Bighorn River, with the 7th Cavalry blocking the southern retreat route and the bulk of the department attacking from the north (Map 3).[36] It is important to note that Terry had no official estimates of the

[34] Collins, *Atlas of the Sioux War*, 60.

[35] Nathaniel Philbrick, *The Last Stand: Custer, Sitting Bull and the Battle of the Little Bighorn*, (New York, NY: Viking Press, 2010),94.

[36] Donohue, *A Terrible Glory: Custer and the Little Bighorn, the Last Great Battle of the American West*, Kindle E-Book, Chapter 9.

enemy's strength or intentions, although Indian Scouts and agents at the Sioux reservations had estimated the hostile strength at least 1,500 lodges.[37]

Terry issued an operations order to Lieutenant Colonel (LTC) George A. Custer, commander of the 7th Cavalry, to proceed up the Rosebud River to the "headwaters of the Tongue" and then move north along the Little Bighorn River, to prevent the "escape of the Indians to the south or southeast."[38] Terry envisioned Gibbon's force moving south along the Little Bighorn, and the two columns trapping the Indians. From reading the order, it is apparent that Terry's main concern was preventing the escape of the Indians, and not that his forces would be met by a force with both superior numbers and the will to stand and fight. His order also provided his subordinate with the leeway to deviate from the plan based on his assessment of the situation and personal experience. In the event, Custer did deviate, and attacked an Indian village further north on the Little Bighorn than originally intended by Terry, prior to the arrival of Gibbon from the north. The Battle of the Little Bighorn resulted in the deaths of over 250 members of the 7th Cavalry, and reduced its effectiveness for the remainder of the campaign. Both Terry and Crook would attempt to pursue the Sioux and Cheyenne throughout the summer, but would struggle to gain contact with and bring to battle any significant Indian force.[39]

The defeat of the 7th Cavalry at the Little Bighorn shocked the nation and the army. Sheridan ordered additional regiments of infantry and cavalry into the Dakota Territory and it is these forces that would eventually fight the decisive battles of Cedar Creek, Dull Knife, and Ash

[37] Estimating Indian strength is difficult, with no agreed upon method for interpreting the number of warriors that were resident in each lodge. For Plains Indians, such as the Sioux, lodges represented the base family unit and contemporary estimates indicated that anywhere from 5-7 persons lived in each lodge. Of that number, 1or 2 might be considered warriors or warrior aged males. A precise indication of strength of the Sioux / Cheyenne force during this campaign is impossible, but based on multiple accounts, the likely number or warriors in the field exceeded 1,000 and may have reached as many as 1,800.

[38] Loyd J.Overfield, *The Little Bighorn, 1876: The Official Communication and Reports, (*Lincoln, NE: University of Nebraska Press, 1990), 23.

[39] Collins, *Atlas of the Sioux War*, 80.

Creek in the late fall and winter of 1876-77. The Sioux Campaign finally ended after those arduous winter battles brought defeat and starvation to the hostile Indians, forcing the surrender of Crazy Horse and the forced exile of Sitting Bull to Canada. The Sioux and Cheyenne accepted reservation life and remained relatively peaceful until the Ghost Dance of 1890 – 91.[40]

Risk Appraisal: Conceived as an operation to enable the quick opening of the Black Hills for mineral exploitation, The Sioux Campaign quickly became a fierce existential struggle for the Indians and a disaster for the U.S. Army. The U.S., war weary after the Civil War, had both demobilized large portions of the Army and underfunded the remaining elements. Since that time, a small professional force subdued the hostile Indians along the frontier. As the frontier steadily moved west, the Indians began to understand that the flood of Europeans was not going to end, and their way of life was under dire threat. The Grant Administration and the army did not detect this shift in attitude, and sent a small and poorly trained force into the field against a force superior in both numbers and ability.

The strategy of hedging the lack of military power by negotiating a treaty with the Native American tribes in the Dakota Territory failed, despite early success. The Ft Laramie treaty reduced the need for military power in the territory. When the strategic environment changed with the discovery of gold in the Black Hills, the reduction of military presence enabled by the treaty came to haunt the American government.

The U.S. accepted risk unknowingly by reducing military capabilities and was only able to reach its objective after rushing reinforcements from elsewhere on the frontier. Custer himself, in a conversation in 1875, stated, “It will take another Phil Kearny massacre to bring

[40] Donohue, *A Terrible Glory: Custer and the Little Bighorn, the Last Great Battle of the American West*, Kindle E-Book, Chapter 21.

Congress to a generous support of the army."[41] The defeat at the Little Bighorn as well as the fights on the Rosebud and Powder Rivers dramatically illustrate the danger of the failure to recognize and mitigate the risk created by the reduction of military capability, without a corresponding adjustment of desired strategic ends. [42] Accepting risk does not mean that success is certain, rather it means that success hinges on not permitting the risk event to occur, or mitigating the consequences if it does.

At the operational level, the concept of risk is evident in the planning and execution of the Department of the Dakota's attack into the area of the Little Bighorn. BG Terry viewed the primary risk as the escape of the Indians from the Army's attack, and never considered that the Indians would seize an opportunity to stand and fight. Using today's military terminology, he built his plan on the enemy's most likely course of action, rather than their most dangerous course of action. The Sioux previously displayed a propensity to stand and fight in the earlier battles on the Rosebud and Powder Rivers, but Terry had no knowledge of those events at the time he went into action. Terry's paradigm was one of the Indian as ambush fighter, one that sought to avoid combat with large forces, seeking instead smaller engagements against isolated elements. His failure to consider the risk of splitting his force created the opportunity for a tactical isolation of one element of his force.

Terry displayed what the U.K. military today terms confirmation bias by planning for the Sioux to act as hit and run fighters. Further, he weighed the risk of failure to accomplish his

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[41] Philbrick, *The Last Stand: Custer, Sitting Bull and the Battle of the Little Bighorn*,171.

[42] In referencing a "Phil Kearny massacre" Custer is specifically refering to what is now known as the "Fetterman Fight," a battle near Ft. Phil Kearny in present day Eastern Wyoming. On 21 December 1866, Captain William J. Fetterman and a detachment of 80 men were attacked by a combined Sioux and Cheyenne force under Crazy Horse. All 81 U.S. personnel were killed in action. Writers such as James Donohue speculate that this victory convinced the U.S. Government that reequipping the frontier army to deal with this threat was too costly and drove the Grant Administration to pursue the Fort Laramie Treaty of 1868. Resource increases for the frontier army did not occur as a result of this battle.

mission because of the Indian's ability to move quickly as greater than the risk of the loss of a battle. Shortfall risk, the idea that the chosen strategy will fail to meet the goal, applies to this situation. Terry believed that he was more likely to miss the opportunity to bring the Sioux to battle and compel their surrender than to suffer defeat at their hands.

Formal articulation of risk in military plans did not occur during this era. Commanders employed their force in line with their assessment of the situation and their experience. In the case of the Sioux Campaign, the government failed to recognize that the Indian Wars had entered an existential phase, one in which the Indian now was fighting for the very existence of his way of life, rather than territory. This change in the nature of the conflict led to more violent and larger scale confrontations, for which years of neglect had left the frontier army ill prepared.

Grant, Sheridan, and Terry accepted all risks, known and unknown. There was no discernible effort to mitigate or hedge visible risk factors. Grant failed to resource the army properly to conduct expeditionary operations of this size. Sheridan developed a campaign plan utilizing minimal forces and based it on cutting off escape and forcing surrender, instead of preparing for a large-scale campaign against a desperate foe. Terry replicated Sheridan's plan on a smaller scale, splitting his force to prevent Sioux escape. He further encouraged subordinates to take immediate action to bring on battle and force Indian surrender. They each assumed the Sioux would continue to fight the way his experience indicated they would, and did not anticipate any alternative actions by the enemy.

Case Study: Pearl Harbor, 1941

Strategic Overview: The Empire of Japan and the United States began drifting towards war immediately following World War I. Japan's desire to be the preeminent power in the Pacific and her insatiable need for natural resources drove her toward an expansionist military policy

beginning in the late 1890's. Territories occupied by Japan during this period included (but were not limited to) the Korean Peninsula, parts of China, and the Marshall Islands. In response to this aggressive policy, the U.S. had actively planned for war against Japan for at least twenty years before 7 December 1941.[43]

U.S. strategic planners produced a series of plans, starting with War Plan Orange, which dealt with war against Japan individually. War Plan Orange eventually folded into the Rainbow Plan series that encompassed simultaneous wars in the Pacific and the Atlantic against Japan and Germany. Both plans envisioned a primarily naval war in the Pacific, with the United States conducting a campaign from its Pacific bases in Hawaii and the Philippine Islands toward the Japanese Home Islands. The Washington Naval Treaties of 1922 limited the size of the U.S. and Japanese fleets and proscribed fortifying Pacific bases. The Treaties also limited gross tonnage of surface combatants, their numbers, and placed restrictions on the building of new battleships. Given the wide expanse of the Pacific, the net result of the Treaties was to grant the Japanese local naval supremacy in the Western Pacific. The Naval Treaties did not limit aircraft carriers, a new class of ship, whose potential impact on naval warfare was unknown. [44] Over the next twenty years, surface combatants of both the U.S. and Japanese fleets aged, but both fleets featured new aircraft carriers capable of delivering massive aerial firepower. For the U.S., fiscal limitations caused by the Great Depression further limited new ship construction throughout the late 1920's and early 1930's, even below the levels dictated by the treaties. In the same period, the Japanese continued to develop aircraft carriers and submarines as well as improve their

[43] Jeffery J. Gudmens and the Staff Ride Team, Combat Studies Institute, *Staff Ride Handbook for the Attack on Pearl Harbor, 7 December 1941: A Study of Defending America*, (Fort Leavenworth, KS: Combat Studies Institute Press,2005), 38-41.

[44] Ibid., 49.

concept for employing them in war.[45] As the 1930s ended, President Franklin D. Roosevelt and the Congress recognized the growing threat posed by the Japanese and authorized construction of a large modern fleet. Scheduled for deployment by 1944, this early start to mobilization proved vital to American operations after 1942.[46]

The Japanese plan for war with the U.S. relied on the distance between the two nations and focused on drawing out the U.S. Fleet for a decisive battle, after which a defeated U.S. would seek to negotiate a peace treaty. Rather than compete with the U.S. on numbers of battleships and cruisers, the Japanese Fleet planned for the use of land based attack aviation flying from bases in its island possessions. These raids, coupled with submarine attacks (submarines were also not included in treaty limitations) would significantly attrit the U.S. Fleet prior to engaging the Japanese surface fleet. The Japanese envisioned a weakened U.S. Fleet, far from its nearest logistical base, as ripe for destruction in surface action. With that strategy in mind, the Japanese built surface warships with an emphasis on heavy guns and speed to the point of sacrificing armor and the ability to stay at sea for long durations.[47] Like the U.S., the Japanese developed an aircraft carrier fleet and a capable air arm, but at the highest levels of the Japanese Navy, combat between surface warships remained the dominant form of naval warfare.[48]

As the 1930s ended, several Japanese actions and American reactions caused the two to drift closer to war. Expansion of Japanese attacks into Manchuria and elsewhere in China in 1937, followed by the Japanese occupation of French Indochina in early 1940, led the U.S. to

[45] Gudmens and the Staff Ride Team, Combat Studies Institute, *Staff Ride Handbook for the Attack on Pearl Harbor, 7 December 1941: A Study of Defending America*, 49.

[46] Ibid., 50.

[47] Alan D. Zimm, *Attack on Pearl Harbor: Strategy, Combat, Myths, Deceptions*, (Havertown, PA: Casemate Publishers, 2011), 18-19.

[48] Ibid., 21.

embargo shipments of steel and iron to Japan. U.S. sanctions, imposed with the intention of stopping aggressive Japanese actions, instead caused the Japanese to pursue further aggressive actions to secure resources. Recognizing the need to avoid a solo war against the U.S., the Japanese then joined the Axis Powers in September 1940.

The Japanese continued belligerent actions and seized additional territory in French Indochina in July 1941. In response, U.S. President Franklin Roosevelt offered the Japanese a deal to secure their resource needs: If they would withdraw from French Indochina, the U.S. would work toward neutralization of that territory.[49] Neutralization of French Indochina would eliminate a colonial power from the region and make its resources available on the open market. This offer provided the Japanese with a hedge; diplomatic concession by the U.S. could secure resources without military force. Preferring to secure the territory by force rather than leave it open for bidding, the Japanese rejected the offer. Viewing this as Japanese intransigence, the United States imposed a complete U.S. embargo of Japan, including oil and fuel products in August 1941.[50] This final embargo placed the Japanese at a decision point, as their oil supplies were inadequate to sustain combat operations for more than two years. This limitation demanded immediate action, prior to completion of the U.S. military mobilization, if Japan were to defeat the U.S. and gain international acceptance of its expansion throughout Asia.[51]

Operational Summary: As war with the U.S. looked more and more likely, the Japanese Navy began to plan for an effective first strike on the U.S. Fleet. The Japanese viewed a destructive first strike as a requirement to prevent U.S. intervention in their plans to occupy territories in

[49] Gordon W. Prange, Donald M. Goldstein, and Katherine V. Dillon, *At Dawn We Slept: The Untold Story of Pearl Harbor, (*New York, NY: McGraw-Hill Book Company, 1981), 166.

[50] Gudmens and the Staff Ride Team Combat Studies Institute, *Staff Ride Handbook for the Attack on Pearl Harbor, 7 December 1941: A Study of Defending America*, 50.

[51] Prange, Goldstein, and Dillon, *At Dawn We Slept: The Untold Story of Pearl Harbor*, 171.

South Asia (Netherlands East Indies, Philippines, and Thailand). The Japanese needed this territory to secure their oil supply.[52] They identified Pearl Harbor, Hawaii as a strategic center of gravity for the U.S. in the Pacific. A strike on this spot would deal the U.S. a material blow from which it could not soon recover. Pearl Harbor was a key point in the U.S. Pacific defense network, part of a line that extended from Alaska through Pearl Harbor to the Panama Canal. For well over a year, elements of the Combined Fleet of the Japanese Imperial Navy planned and practiced for a combined air and subsurface strike on Pearl Harbor. This strike was to destroy the ability of the U.S. fleet to stop Japanese advances, deal a significant blow to U.S. morale, and drive the U.S. to a negotiated peace.[53] An added advantage of attacking at Pearl Harbor was isolation of the Western most base of the U.S. in the Pacific, the Philippine Islands.

Admiral Isoroku Yamamoto, Commander in Chief of the Combined Fleet, directed the planning of the Pearl Harbor attack. Although Yamamoto was an advocate for development of the Fleet Air Arm and aircraft carriers, he remained a surface naval warrior at heart. His orders for the attack reflect a targeting priority that emphasized striking the U.S. aircraft carriers, but he directed the attack go forward even after it was determined that no carriers were in port.[54] Now aimed against surface ships alone, the attack on Pearl Harbor, no matter the number of ships destroyed, would have limited effect on the striking power of the U.S. Fleet.

On the American side, the local commanders, Rear Admiral (RADM) Husband E. Kimmel, U.S. Navy, and Major General (MG) Walter C. Short, U.S. Army, were responsible for the battle readiness of the American forces in Hawaii. As Commander of the Pacific Fleet Kimmel had responsibility to prepare his fleet for war, provide "long-range reconnaissance and

[52] Supreme Commander for the Allied Powers, "Research Report: The Pearl Harbor Operation," Allied Translator and Interpreter Section, (General Headquarters, Tokyo, JPN, 1945), 7.

[53] Ibid.,7.

[54] Zimm, *Attack on Pearl Harbor: Strategy, Combat, Myths, Deceptions*, 153.

to cooperate with the Army for the defense of Hawaii."[55] Although he received several warning messages from Navy Headquarters in Washington, D.C. indicating both that a war with Japan was imminent and of the possibility of a surprise Japanese attack, Kimmel did not aggressively pursue defensive actions around Hawaii. Kimmel trained his fleet for battle at sea, but did not establish force protection measures in port commensurate with the potential Japanese threat. Many historians argue this was due to his belief that the Japanese did not have the capability to strike Pearl Harbor.[56]

Similarly, MG Short's task was to provide full protection to the fleet while in port at Pearl Harbor.[57] The U.S. Army was primarily responsible for anti-aircraft (AA) defense, ground defense, and fighter combat air patrol around Pearl Harbor. Short interpreted the warnings he received as indications of likely ground attack by infiltrators and directed the positioning of aircraft out of protective shelters and into large groupings on open aircraft ramps for easier ground security. Further compounding the error, AA weapons did not have ammunition nearby, and the newly installed radar sets were not operating on a regular basis.[58] Despite preparations for ground attack and sabotage, Short had not prepared the army forces in Hawaii for attack any better than Kimmel had the navy.

The result of the lack of both preparation and imagination was an astounding American defeat. At the cost of 30 aircraft destroyed, 111 recovered but damaged, and the loss of five midget submarines, the Japanese inflicted serious, if temporary, damage on the U.S. Fleet. U.S. losses were four battleships sunk, three battleships damaged, four other types of ships sunk, and

[55] Fred Borch and Daniel Martinez, *Kimmel, Short, and Pearl Harbor: The Final Report Revealed,* (Naval Institute Press: Annapolis, MD, 2001), 48.

[56] Ibid. 50-57.

[57] Ibid.,48.

[58] Ibid, 58-62.

nine others damaged.[59] Additional losses included 165 aircraft and at least 3,185 people killed, wounded or missing.[60]

Risk Appraisal: Built on the conquest of Asian nations to fuel its economic power, Japan's pre-war national strategy forced it to secure their own fuel supply. The Japanese saw reliance on the other great Pacific power, the U.S., for fuel as an unacceptable risk to their freedom of action. Throughout the 1930's as Japan expanded its empire, the U.S. responded with evermore increasing levels of trade sanctions, which Japan viewed as an attempt to restrain their economic growth. The Japanese saw the belated U.S. decision to rebuild its fleet, coupled with the implementation of an oil embargo as a key decision point. From the Japanese perspective, the U.S. oil embargo, combined with a reinvigorated and more capable U.S. fleet, was an existential threat to the empire that demanded immediate action.[61] Rather than seek to hedge the risk of relying on the U.S. for fuel by negotiating oil rights in the Dutch East Indies, the Japanese attacked, in the belief that a crushing blow would devastate the American will to fight. The Japanese recognized the strategic risk to their fuel supply, but saw war as the best mitigation, rather than hedging risk with a treaty that the U.S. could always renege.

ADM Yamamoto pursued the attack despite knowing the U.S. carriers were not in port at Pearl Harbor. He weighed the risk of having his carriers at sea, far from Japan, well within U.S. fleet striking range and decided to push ahead regardless of the potential payoff. He, more than any senior Japanese officer, should have known that the carrier was now the striking arm of a modern navy. By attacking the battleships at Pearl Harbor, he stung the U.S., but he did not

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[59] Zimm, *Attack on Pearl Harbor: Strategy, Combat, Myths, Deceptions*, 270-271, 330, and Supreme Commander for the Allied Powers, "Research Report: The Pearl Harbor Operation," 17.

[60] Gudmens and the Staff Ride Team Combat Studies Institute, *Staff Ride Handbook for the Attack on Pearl Harbor, 7 December 1941: A Study of Defending America*, 119-120.

[61] Supreme Commander for the Allied Powers, "Research Report: The Pearl Harbor Operation," 7.

remove its bite. He did not achieve his intent to shock the U.S. into a negotiated peace favorable to Japan or to delay U.S. fleet action for at least six months. Instead, the failure to destroy or suppress the U.S. aircraft carriers enabled the U.S. to continue fighting throughout 1942. At the operational level, ADM Yamamoto's desire to conduct the strike while minimizing the risk to his exposed carriers created strategic risk by leaving the American carriers unscathed. These carriers would come back to haunt the Combined Fleet at the Coral Sea and at Midway, and would effectively blunt the Japanese advance. Moreover, American public opinion galvanized behind the war effort as a result of the tremendous loss of life in a perceived treacherous sneak attack.

On the American side, both RADM Kimmel and MG Short also recognized that there was a risk of war with Japan; however, their analysis of risk lacked imagination. In particular, Kimmel did not believe that the Japanese had the capability to launch airstrikes on Pearl Harbor. This translated to an attitude that permitted liberal shore leave, inadequate defensive measures, and limited aerial reconnaissance.[62] Focused on the idea that the war with Japan would start at sea and be a fight between battleships, Kimmel prepared for the exclusive fight he wanted, instead of preparing for general fighting. Essentially, he chose to prepare for his preferred course of action and accepted risk by not preparing for the alternative enemy courses of action. Kimmel "mirror imaged" the Japanese, assuming they would act as he would if the roles were reversed.

In much the same way, MG Short also prepared for the type of war he knew best. As a career infantryman, he prepared his command to defend Hawaii from a ground-based attack. He failed to establish an effective and round the clock air defense system, even though he was

[62] Zimm, *Attack on Pearl Harbor: Strategy, Combat, Myths, Deceptions*, 356.

equipped with radar sets, mobile AA batteries, and fighter aircraft.[63] His decisions led to the destruction of most of his aircraft on the ground, and gave the Japanese the ability to strike virtually unmolested by fighters or effective AA fire. His failure to understand the nature of the threat, combined with a similar desire to fight the battle he wanted, created a vulnerability the Japanese exploited on 7 December 1941.

The Japanese conceived the Pearl Harbor attack as a "Waterloo" moment of the war.[64] Yamamoto brilliantly capitalized on the myopic preparations of the two American commanders, and then surrendered that advantage by pressing the attack despite the known absence of the U.S. aircraft carriers. This action forced him to accept significant operational risk, forcing the Japanese to fight, at sea, against the American carrier force. Further, the Japanese failed to understand the strategic risk created by provoking a war with the U.S. Alternatives to war were available through negotiation, although negotiation may have limited their freedom of action. The failure to understand the strategic impact of the operational risk created when the attack went forward turned the hoped for Waterloo moment into a Pyrrhic victory for the Japanese.

Case Study: The Battle of Midway, 1942

Strategic Overview: The Pearl Harbor attack failed to destroy the U.S. aircraft carriers, which were at sea during the attack. Those carriers would now demonstrate that the paradigm of a battleship-based fleet had shifted to a fleet whose primary striking arm was carrier-based aviation. Although Japanese aggression continued successfully in the months immediately following the Pearl Harbor attacks, the U.S. carriers would move from a raiding and harassment force into the force that would check the Japanese advance.

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[63] Zimm, *Attack on Pearl Harbor: Strategy, Combat, Myths, Deceptions*, 355.

[64] Supreme Commander for the Allied Powers, "Research Report: The Pearl Harbor Operation," 7.

Immediately after the attack on Pearl Harbor, the Japanese launched an aggressive campaign throughout the Pacific. On 8 December 1941, they attacked both the Philippine Islands and Malaya.[65] Next, Guam fell on 10 December followed by Wake Island, which fell on 23 December.[66] Continuing into 1942, they seized Rabaul on 23 January and attacked the Dutch East Indies on the same day.[67] All of these territories were in the possession of the Japanese by May 1942, which provided them with a solid ring with which to protect their home islands and draw resources. As they looked toward the summer of 1942, the Japanese wanted to secure New Guinea, especially Port Moresby as well as New Caledonia and the New Hebrides. The goal of this attack was to secure needed resources, but also to cut off Australia from its vital sea-lanes and force them out of the war.[68]

U.S. forces, although badly shaken by the stunning rapidity of the Japanese advance, had taken offensive action. Raiding throughout the Gilbert and Marianas Islands, carrier task forces had managed to inflict some damage on Japanese forces in the period immediately after Pearl Harbor. These raids culminated on 18 April 1942 with the "Doolittle Raid" on Tokyo.[69] U.S. Army B-25 Mitchell bombers launched from the U.S.S. Hornet provided a symbolic strike on the enemy capital city that boosted American morale, but also indicated the future of warfare. As the American Pacific Fleet, under ADM Chester W. Nimitz, began to reconstitute itself after the first five months of war, it became a carrier-oriented force out of both necessity and practicality. The remaining U.S. battleships were too slow to keep up with the carriers and so the faster

[65]Jack Greene, The *Midway Campaign: December 7 1941 - June 6 1942*, (Conshohocken, PA: Combined Books, Inc., 1995) 71, 87.

[66] Ibid., 115, 120.

[67] Ibid., 116, 121.

[68] Samuel E. Morrison, *History of United States Naval Operations in World War II, Volume Four – Coral Sea, Midway and Submarine Actions*, May 1942 –August 1942, (Boston, MA: Little Brown and Company, 1949), 10.

[69] Gordon W. Prange, Donald M. Goldstien, and Katherine V. Dillon, *Miracle at Midway,(*New York, NY: McGraw-Hill Book Company, 1982), 24.

cruisers and destroyers that were better equipped for anti-air warfare became the escort of choice for these task forces.[70] The U.S. fleet had an additional asset on its side, a team of cryptanalysts assigned to Pearl Harbor, whose primary mission was deciphering the Japanese naval operational code.[71]

In early May 1942, the Japanese advanced toward Port Moresby. The result of this advance was the Battle of the Coral Sea. Echoing the earlier carrier raids, this battle was the first naval engagement in history in which no surface ships sighted one another.[72] Although the U.S. losses included one carrier sunk and another damaged, as well as two other surface ships lost, the Japanese retired without achieving their objective for the first time in the Pacific War. Critically, the Japanese lost their first carrier of the war.[73]

The war now turned back toward the central Pacific and the tiny atoll of Midway. Japan viewed this island as the essential link in its outer security perimeter and wanted to control the island as a means of securing the home islands from additional carrier raids. Further, Yamamoto desired to draw out the U.S. fleet for a decisive battle, one that would destroy the fleet before the material strength of the U.S. came to bear. He saw Midway as bait for Nimitz, believing that it was too valuable to the defense of Hawaii for him to ignore.[74]

Nimitz, still outnumbered in all classes of warship, had one major advantage: his cryptanalysts had broken the Japanese naval code. This advantage allowed him to reinforce Midway, surge all available forces to the area, and anticipate the direction of Japanese attack.[75]

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[70] Prange, Goldstien and Dillon, *Miracle at Midway,*, 59.

[71] Ibid., 18.

[72] Jack Greene, *The Midway Campaign: December 7 1941 - June 6 1942*, 167.

[73] Morrison, *History of United States Naval Operations in World War II, Volume Four*, 63.

[74] Ibid., 75.

[75] E.B. Potter, *Nimitz, (*Annapolis, MD: Naval Institute Press, 1976), 80,83.

Although his intelligence was good, by deploying the vast majority of his available naval combat power to the defense of Midway, he met ADM Yamamoto's expectations.

Operational Summary: Despite the Midway operation being a Japanese offensive, Nimitz reacted to his intelligence advantage and seized the initiative. He knew that the Japanese intended to coordinate the attack on Midway with an attack on the Aleutian Islands. Nimitz viewed this attack as a diversion from the Midway attack and reacted accordingly by resisting the urge to "defend everywhere" and maximizing carrier strength for the Midway operation.[76] His plan for operations in defense of Midway, designated Operation Plan 29-42, utilized the intelligence gained from the decrypted code to position his forces and provide them explicit guidance on target selection and engagement criteria. Perhaps the most striking part of this order is his "Letter of Instructions" to his striking force commanders. This letter instructs his commanders to conduct operations "governed by the principle of calculated risk." Calculated risk, in this case, meant that the commanders should avoid exposure to attack by superior enemy forces without the prospect of inflicting greater damage on the enemy.[77] Nimitz understood that his greatest risk was loss of his carriers, his striking arm. Despite his desire to attrit the Japanese fleet, he knew that the greatest risk to the U.S. was loss of more carriers, and the depletion of the most effective weapon he had in the war.

Under Yamamoto's direction, the Combined Fleet advanced toward Midway organized into five separate force groupings. Individual forces of submarines, carriers, invasion and occupation forces, surface warfare ships and a combined carrier and surface force to conduct the Aleutian operation made up the fleet's combat power. His concept of operations was for the

[76] Potter, *Nimitz,* 80-81.

[77] Commander in Chief, U.S. Pacific Fleet, "Operation Plan No. 29-42: Admiral C.W. Nimitz, USN, Organizes the forces under his command to prevent the capture and occupation of Midway by enemy forces," (Pearl Harbor, HI: United States Pacific Fleet, 27 May 1942), 6, 15.

carrier strike force to deliver preparatory fires on Midway, and then conduct initial strikes on the U.S. Pacific Fleet. Yamamoto envisioned using his modern and capable battleships to deliver the knockout punch to the Americans. In the event the U.S. Fleet did not sortie to Midway, his Aleutian force included not only the invasion transports, but also carrier and surface combatants sufficient to protect the invasion force.[78] This ambitious plan spread the Japanese force out over the entire northern Pacific Ocean. For operations around Midway, the Japanese would field six carriers, three new fast battleships, dozens of cruisers, destroyers, and submarines.

Comprised of just three carriers, eight cruisers, 15 destroyers, and 19 submarines, the U.S. Fleet, outgunned in terms of surface ships, had the advantage of shore based aviation and superior intelligence.[79] The intelligence advantage enabled ADM Nimitz to mass his combat power at the right point, and therefore achieve force parity with the Japanese, if not local force superiority.

The ensuing battle again featured waves of carrier-based aircraft searching for the enemy fleet and relentlessly driving attacks home. In a similar manner to the Battle of the Coral Sea, the Battle of Midway was an aviation led fight. Submarines did strike both fleets, but airplanes delivered the significant damage to both sides. From 3 - 6 June 1942, the Japanese lost four carriers, one heavy cruiser, and 322 aircraft. The U.S. Fleet lost one carrier, one destroyer, and 147 aircraft.[80] Although each side experienced significant losses, the Japanese loss of four carriers effectively eliminated the offensive capacity of the Imperial Japanese fleet for the remainder of the war.

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[78] Morrison, *History of United States Naval Operations in World War II, Volume Four*, 77.

[79] Ibid., 88-93.

[80] E.B. Potter, *Nimitz*, 107.

On the evening of 6 June, U.S. Task Force 16 (TF16), under Rear Admiral (RADM) Raymond Spruance began a withdrawal from the pursuit of the defeated Japanese fleet. TF16, primarily composed of the three remaining U.S. carriers, had been in search of the surviving Japanese ships near Midway Island. Of this decision, Spruance would later say, "I had a feeling, an intuition perhaps, that we had pushed our luck as far to the westward as was good for us."[81] This was a wise decision, in light of the fact that Yamamoto's main body force of new battleships and cruisers was attempting to lure the American fleet into a night surface fight. The U.S. Fleet still lacked significant surface combat power and in a night engagement with the Japanese would be both outnumbered and outgunned.

Risk Analysis: Nimitz understood that he had limited resources with which to fight the Japanese. He had to balance his desire to blunt the Japanese capability to conduct offensive operations with the need to preserve his force. To strike this balance, Nimitz utilized a "defensive-offensive" strategy. Although the Japanese were on the offense and determining the location and tempo of their advance, Nimitz sought to find the right spot and time to mass his available force for maximum effect and minimum risk. He utilized his intelligence advantage to position his forces for the fight, but employed the concept of "calculated risk" to preserve his force.

In "Operation Plan No. 29-42," Nimitz conveyed his risk tolerance simply and effectively to his subordinates. They were to attrit the enemy to the maximum extent possible, but also remember that they had to do so judiciously. He knew the Pacific Fleet was near its culmination point, the point at which a force no longer has the capability to continue its form of operations.[82]

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[81] Greene, *The Midway Campaign: December 7 1941 - June 6 1942*, 226.

[82] U.S. Joint Chiefs of Staff, "DOD Dictionary of Military Terms," Joint Chiefs of Staff, http://www.dtic.mil/doctrine/dod_dictionary/?zoom_query=culmination&zoom_sort=0&zoom_per_page=10&zoom_and=1 (accessed on 13 Dec 2012).

He understood his adversary was a skilled commander with a powerful fleet, and knew that aggressive pursuit of local tactical success may push the fleet past its ability to support and sustain, placing the pursuing elements at risk to a much larger force. Spruance's decision to break off pursuit on 6 June displayed the significance and value of this concise statement of risk.

TF16 contained the last two U.S. carriers available near Midway. Although an additional carrier, the U.S.S. Saratoga, was in transit from San Diego, TF 16's two carriers represented the bulk of the surviving U.S. Fleet on 6 June. The risk of loss associated with a pursuit of the damaged Japanese cruisers Mogami and Mikuma by the nearly exhausted TF16 would have greatly exceeded the benefit of sinking these ships. By informing his subordinates of the level of risk that he was willing to accept, Nimitz empowered Spruance to break off pursuit without concern of negative repercussions.

By defining risk to his subordinates, Nimitz empowered them to operate in a dispersed environment. Operating with confidence in a radio silence environment, Spruance broke off contact with the Japanese fleet after inflicting devastation upon their carrier force. He did so in the knowledge that he had met his commander's intent, preserved his force, and defended Midway. Nimitz, by defining acceptable risk to his subordinates, clearly enabled mission accomplishment.

Case Study: Risk vs. Gamble, Chancellorsville, 1863

> It is my experience that bold decisions give the best promise of success. But one must differentiate between strategical or tactical boldness and a military gamble. A bold operation is one in which success is not a certainty but which in case of failure leaves one with sufficient forces in hand to cope with whatever situation may arise. A gamble, on the other hand, is an operation which can either lead to victory or to the complete destruction of one's force.[83]
>
> - Field Marshall Erwin Rommel, German Army

Field Marshall Erwin Rommel provided one of the clearest definitions of risk in a military environment. His differentiation between accepting risk and gambling is a valuable construct for use at the tactical and operational levels of war. The classic example of the risk versus gamble question in American military history is the Battle of Chancellorsville, VA fought in 1863. GEN Lee's reaction to the sudden appearance of a large Union force to the rear of his army provides an insight into understanding how the strategic situation and the personal temperament of a commander can combine to influence risk tolerance and battlefield outcomes.

Operational Overview: By the spring of 1863, the Army of Northern Virginia had shown that it was more than a match for the Union Army of the Potomac. Stunning victories on the Peninsula, Fredericksburg, and Manassas blunted each attempted Union offensive, although Lee's strategy of aggressively defending the territorial integrity of Virginia had failed to deliver a decisive battle that forced the Union to negotiate a peace. However, the continued resistance of the South demonstrated to the world the potential vitality of an independent Southern nation and the futility of Union attempts to suppress it. In truth, the ability of the South to continue to resist was in doubt. Deployed along the Rappahannock River, Lee's army, although in strongly fortified positions, was running low on food. The food shortage was so critical that it inhibited Lee's

[83] Erwin Rommel, *The Rommel Papers,* ed. Basil H. Liddell-Hart, trans. Paul Findlay, (New York: Da Capo Press, 1982), 201.

ability to conduct offensive action.[84] So dire was the situation that Lee sent two divisions to southeast Virginia, partly to protect against a possible new Union landing on the Peninsula and partly to alleviate the demand for food on the countryside near the Rappahannock.[85] The two armies, the Army of the Potomac reorganizing after the disaster of Fredericksburg, and the Army of Northern Virginia unable to feed itself, faced off against each other along the river for four months. Only occasional skirmishes and cavalry raids broke the quiet.

Forced to surrender the tactical initiative due to his supply situation, Lee could not determine the most likely move of his new Union adversary, MG Joseph Hooker. Hooker took command after the failure of MG Ambrose Burnside's "Mud March" attempt to cross the Rappahannock in January 1863. After rebuilding the badly damaged Army of the Potomac, Hooker located several suitable fords in the Rappahannock, and decided on a course of action to break the deadlock. Hooker intended to cross the Rappahannock covertly and position his army between Lee and Richmond.

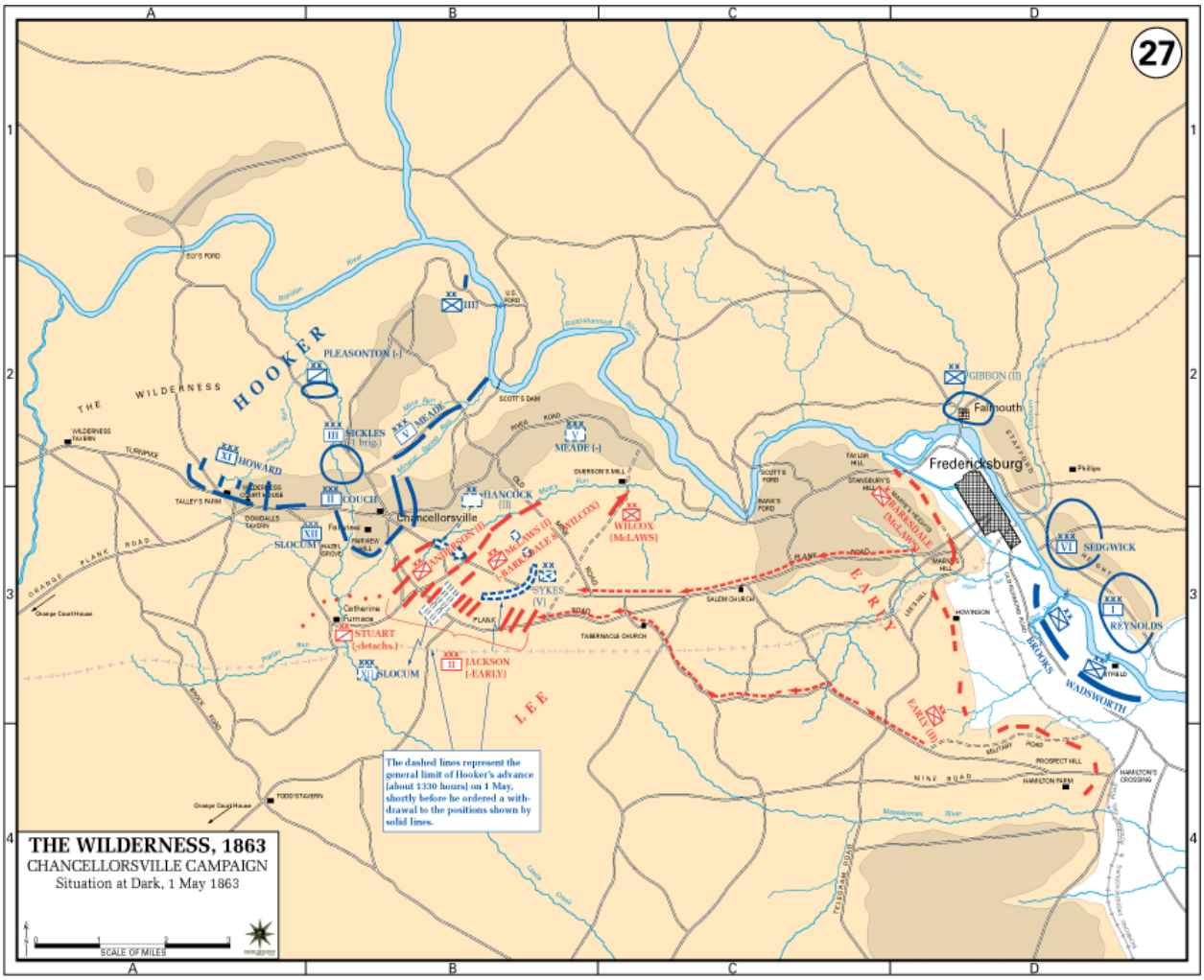
On 28 April 1863, the Army of the Potomac began crossing the Rappahannock north of Fredericksburg and by 30 April had over 65,000 men across the river and in positions around Chancellorsville.[86] An additional 24,000 Union troops were opposite Fredericksburg and launched a demonstration that succeeded in distracting the opposing Confederates. Hooker also deployed a large cavalry corps of nearly 9,000 men moving in a wide arch south of the

[84] Stephen W. Sears, *Chancellorsville,* (New York: Houghton Mifflin Company, 1996), 33.

[85] Ernest B. Furgurson, *Chancellorsville, 1863: The Souls of the Brave,* (New York: Alfred A. Knopf, 1992),48.

[86] Carl Smith, *Chancellorsville 1863,* (Oxford, U.K.: Osprey Publishing, 2000), 16-17.

Rappahannock.[87] Against this force, GEN Lee's army could count approximately 42,000 men.[88]



Map 4 - Chancellorsville, Day 1[89]

All of this movement momentarily confused Lee, surprising him with both the suddenness and boldness of the Union maneuver.[90] He found himself faced with the decision to either allow a Union force of unknown strength to maneuver between his army and Richmond, or

[87] Carl Smith, *Chancellorsville 1863*, (Oxford, U.K.: Osprey Publishing, 2000),32,71.

[88] Furgurson, *Chancellorsville, 1863: The Souls of the Brave*,142.

[89] United States Military Academy History Department, "Chancellorsville – Situation Dark, 1 May, 1863," United States Military Academy, http://www.westpoint.edu/history/SiteAssets/SitePages/American%20Civil%20War/ACW27.gif (accessed 11 March 2013).

[90] Sears, *Chancellorsville*,168.

to leave his prepared positions and give battle. Lee recognized that the likely route of advance of the Union Army was through the town of Chancellorsville, toward Fredericksburg. He also recognized that the movements across the Rappahannock in front of Fredericksburg were a likely deception. He quickly positioned forces near Chancellorsville to block the Union advance, and then split his army, by sending LTG Jackson and his corps to reinforce the brigades at Chancellorsville (Map 4).[91] The Union advance was blocked, and Hooker ordered his troops to return to the area they occupied the previous day, giving up ground they had gained, and opening a window for bold enemy maneuver to seize the initiative.

After successfully blocking the Union advance on 1 May, Jackson learned of a route around the Union flank. This route took advantage of the cover provided by the thick forest of the area and enabled the potential of a flanking movement on the Army of the Potomac. He proposed the idea to Lee, requesting 28,000 troops to make the assault. Lee approved the audacious plan, despite being left with only 14,000 troops to both block potential Union advances south from Chancellorsville and from directly across the Rappahannock into Fredericksburg.[92]

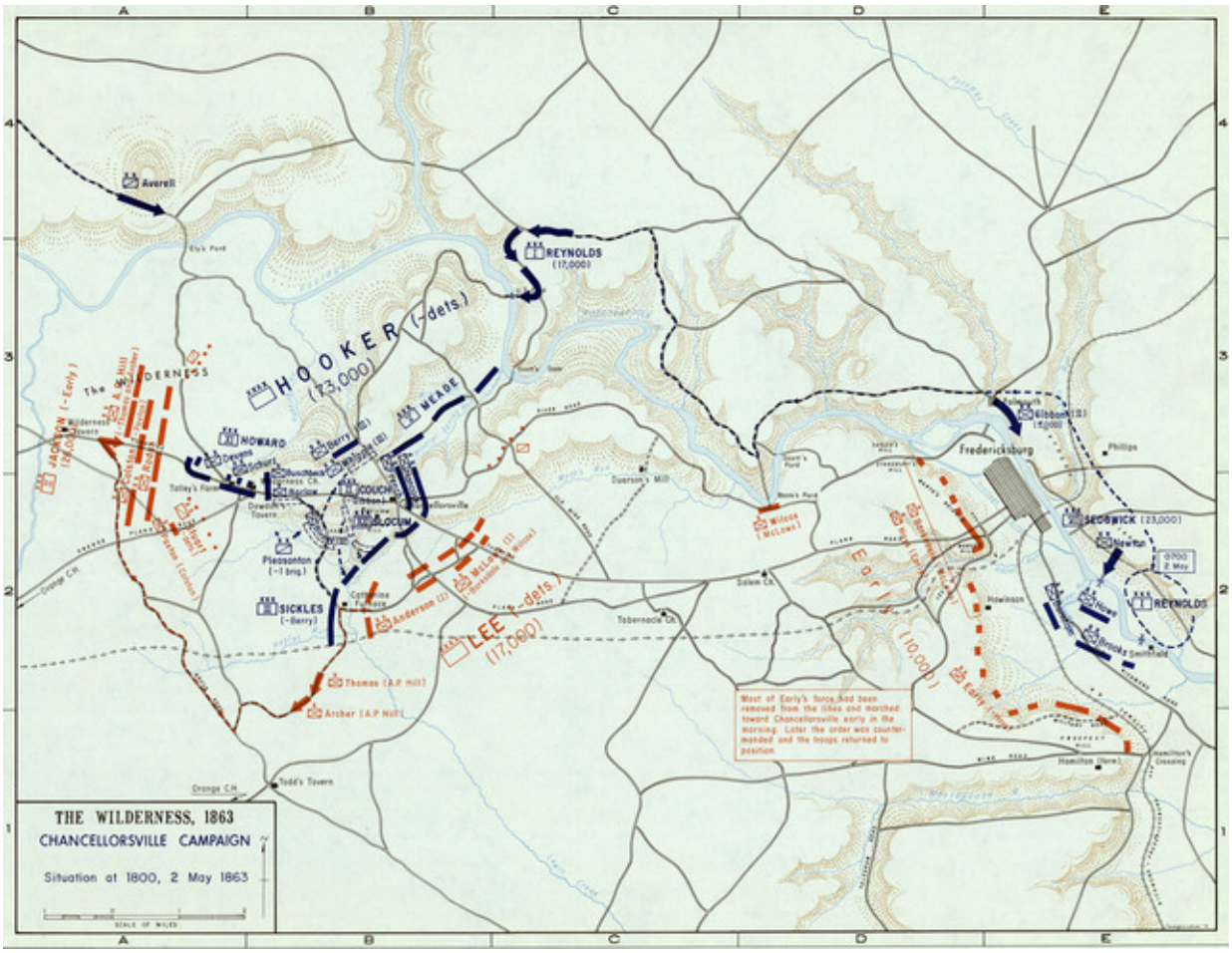
Jackson began his march early in the morning of 2 May, and by 1700 had reached his planned attack positions. Although detected by elements of the Union Army, they apparently thought the Confederate force was in retreat, and did not heighten alert along the Union line.[93] The ensuing attack and the panic that followed in the Union lines broke Hooker's will to continue the advance (Map 5). Although the attack and the next day's battle did not physically

[91] Smith, *Chancellorsville 1863*, 40-42.

[92] Ibid., 46.

[93] Ibid., 50.

force the Army of the Potomac back over the Rappahannock, Jackson's flank march and attack stopped any serious advance by Hooker.



Map 5 - Jackson's Flank Attack[94]

After pushing Union forces out of Chancellorsville on 3 May, Lee's Army of Northern Virginia reunited its split force. Although the Union Army was able to capture Mayre's Heights (the killing ground of the December 1862 Battle of Fredericksburg), Hooker could not link up with his southern force. Beaten mentally, if not physically, Hooker did not reinforce the success in Fredericksburg, and ordered the retreat of the Army of the Potomac to the north side of the Rappahannock on 4 May.

[94] Dickinson College, "Chancellorsville – Situation at 1800 2 May, 1863," House Divided. The Civil War Research Engine at Dickson College, http://hd.housedivided.dickinson.edu/node/39233 (accessed 10 April 2013).

Wounded by friendly fire on 2 May, Jackson would later die of his wounds. Although hailed as one of the most brilliant victories of the Army of Northern Virginia during the war, victory at Chancellorsville exacted a large cost. Not only did the Confederacy lose Jackson, but also an additional 12,821 casualties.[95] The risks assumed by Lee did enable the survivors to continue the war, and kept the Confederacy alive for another two years.

Risk Appraisal: Concerned that his Army was in danger of entrapment, Lee accepted risk and split his force on 1 May. Successful in stopping the enemy advance, his subordinate saw the opportunity to retake the initiative and defeat the offensive. Lee chose to accept risk and divide his force yet again. He had two choices: Approve Jackson's plan, or wait in position and allow Hooker to determine both the pace and place of battle. Clearly, Lee commanded the weaker force, and if trapped, the overwhelming numbers available to the Union made escape unlikely.

Hooker's maneuver, much like McClellan before him, put the Army of Northern Virginia in an existential fight. Fighting literally for the life of his army, Lee had no choice but to accept risk, even though no cohesive force would remain on the battlefield if the attack failed. Only the two divisions in Southeast Virginia would remain unscathed if Jackson's flank attack failed. A defeat meant the road to Richmond would finally be open, while victory only provided the Confederacy with the right to continue the fight. Lee accepted risk at the strategic level by placing his army on the verge of destruction. Lee both accepted and transferred risk as his battle plan risked tactical destruction of his army, and in accepting that risk, he transferred additional risk to the meager forces remaining to defend Richmond.

Rommel would likely term this decision a gamble. Lee's decision to split his army in the face of overwhelming numbers was a move brought about by desperation. If defeated, his army

[95] Furgurson, *Chancellorsville, 1863: The Souls of the Brave*, 365.

would not retain any ability to resist effectively. Lee saw no other course of action that would prevent the Union Army from moving south toward Richmond and preserve his force; he had no choice but to gamble.

CHAPTER 4: ANALYSIS AND RECOMMENDATIONS

This chapter fuses the theory, doctrine and lessons learned from history presented in the first three chapters and constructs a proposed method for analyzing risk. Beyond determining risk, communication of the resulting analysis is essential for the effort to have value. This chapter recommends a proposed model for communicating risk assessments as well as an expanded risk lexicon and advocates for their inclusion in U.S. military doctrine.

Although seemingly a simple process, effective risk management requires constant attention and commander decision making.[1] In all levels of planning, but especially in operational planning, situational awareness of the proposed environment is critical to developing a realistic and accurate risk analysis. As plans move into execution, regular validation of identified risks as well as identification of new risks is essential. The dynamic environment of war demands that risk analysis be an iterative process. Complicating this demand is that the tempo of operations already heavily burdens commanders and staffs, leaving little time for additional process and review. There is no way to simplify risk analysis, its complicated nature demands concentrated intellectual effort.

One way to balance these competing demands is with the use of cognitive artifacts or models to assist in conducting risk assessments. Defined as "those artificial devices that maintain, display, or operate upon information in order to serve a representational function and that affect human cognitive performance," cognitive artifacts serve to enhance our ability to

[1] U.S. Joint Chiefs of Staff, *Operations*, III-15.

process information.[2] For an iterative process such as risk assessment, a model may have value in shortening the time required to analyze risk, and help to ensure commanders and staff consider relevant areas of potential risk.[3]

To better frame the discussion of risk, the author developed a model for understanding the essential elements of the risk analysis process. The process has four steps: Assessment, Communication, Decision, and Action (Figure 1). Represented as a loop, this model represents the iterative nature of risk analysis. Utilizing aspects of each case study and the relevant points from the literature review, and its potential application at the strategic and operational level, the remainder of this section explores the utility of the model.

Figure 1 - Proposed Risk Analysis Process[4]

Risk Assessment

The entry point into the proposed model is to assess the risks inherent in the strategic or operational environment. The risk assessment step includes identification of risks and estimation of the exposure to risk (Figure 2). Prior to starting a risk assessment, a thorough understanding of the strategic or operational environment is essential. In order to assess and communicate risk

[2] Donald A. Norman , "Cognitive Artifacts," In *Designing Interaction: Psychology at the Human-Computer Interface* (Cambridge, UK: Cambridge University Press, 1991), 17.

[3] For purposes of clarity, this paper utilizes the term "model" instead of the term cognitive artifact.

[4] Unless otherwise noted, all diagrams in this chapter are original works of the author.

accurately, planners must understand their environment. The environmental assessment conducted as part of the initial stages of the Joint Operation Plans Process (JOPP) is adequate to orient planners to key factors that may influence risk assessments. At the strategic level, a broader perspective is essential and requires the incorporation of the entire spectrum of national power.

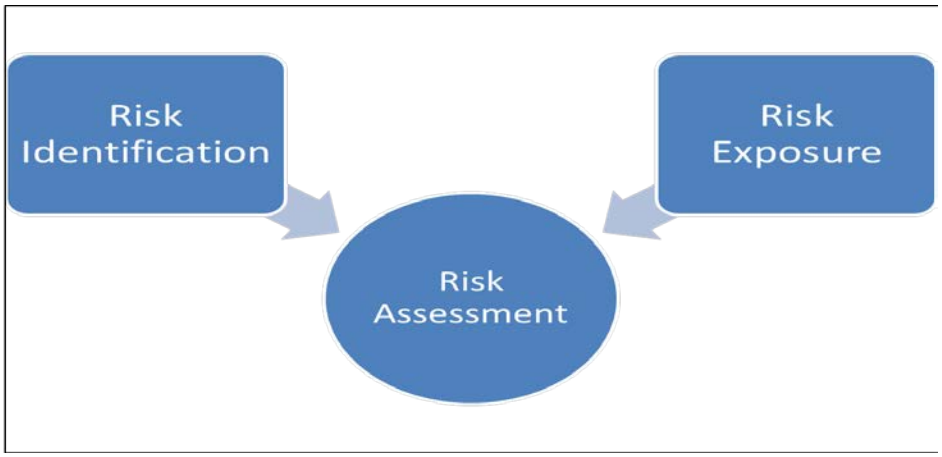


Figure 2 - Risk Assessment

Risk Identification: Risk identification is the first and most difficult step in the process. Risk identification is the art of risk analysis and requires planners to visualize the effects of operations on all factors in the environment.

Figure 3 - Factors Influencing Risk Identification

An understanding of the factors that influence operations is essential to successful risk analysis. At least three broad categories of factors influence risk identification: operational environment, enemy forces, and friendly forces (Figure 3). Colin Gray described the sources of uncertainty as, "the enemy, ourselves and what for want of a more elegant concept we will simply call the unexpected."[5] Fortunately, development of most of the information required to conduct the risk identification step is part of the established planning process, primarily as part of Joint Intelligence Preparation of the Operating Environment (JIPOE). When done effectively, the JIPOE defines the operational environment and its impact on the operation, evaluates the adversary, and describes the adversary's most likely and most dangerous courses of action.[6] As useful as this information is, it does not complete the risk assessment; rather it provides the information necessary to begin the analysis of risk.

One cautionary note: as conditions change, so must the risk assessment. Knowledge of a change is not the same as validating the risk assessment. For example, as a planning assumption, a specific friendly capability is included in the forces available. If the capability is not available due to other operational commitments, the assumption is invalid and requires a review of the initial risk assessment.

The operational environment is the composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander.[7] Normally, this definition is inclusive of both the enemy and friendly systems and forces that affect the intended operations. For purposes of this analysis, separation of both the enemy and friendly categories from the operational environment provides a more logical method

[5] Colin Gray, *Fighting Talk: Forty Maxims on War, Peace and Strategy*, 40.

[6] U.S. Joint Chiefs of Staff, *Joint Intelligence Preparation of the Operational Environment,* Joint Publication 2-0.3, (Washington, D.C.: Joint Chiefs of Staff 16 Jun 2009), I-1.

[7] U.S. Joint Chiefs of Staff, *Operations*, IV-1.

of categorizing risk sources. In this model, the operational environment encompasses risk sources that are beyond the direct control of the main antagonists. In most circumstances, risk sources emanating from the operational environment influence all sides involved in the campaign, although the impact (positive or negative) is different for each participant.

Terrain and weather are traditional areas of concern for commanders, and serve as an example of how the operational environment can inject risk into the planning process. Commanders have little control over the terrain or weather in which they will operate. Acknowledging that lack of control and directing steps to mitigate the effects of terrain and weather is a simple example of successful risk identification to aid decision processes.

In the same manner, any proposed operation has to account for the impact of populations be they friendly, hostile, or neutral. Consideration of the will of the people, whether expressed indirectly through the political leadership of a country, or directly through protest or other means, is an essential element in the operational environment category. Not only is support of the population required to sustain a campaign, but also modern experience indicates that each adversary will attempt to engage the opposing population to influence their will.[8] Likewise, actions occurring within the scope of an operation often have unintended consequences that directly affect the populations involved, potentially hardening an enemy populations' will to resist or conversely, weakening domestic support.

The operational environment has other risk components that are vital to risk assessment. U.S. Army Lieutenant Colonel Nathan Freier, writing about strategic risk assessment in relation to the decision to invade Iraq noted, "There was a certainty that at least two of Iraq's neighbors

[8] United States Joint Forces Command, *Commander's Handbook for Strategic Communication and Communication Strategy*, Version 3.0, (Suffolk, VA: U.S. Joint Warfighting Center), I-1.

would actively resist through politics, influence, and at times, violence."[9] Never officially designated as combatants, these neighbor states yielded an undeniable influence on the operational environment. Risk mitigation actions to neutralize, limit, or co-opt this influence may have led to less external impact on the campaign in Iraq. Therefore, in the proposed risk identification model, consideration of the impact of third party actors is essential and categorized under operational environment.

When examining the risk associated with enemy actions, it is essential to consider not only the most likely or most dangerous courses of actions, but also moral strength and employment of specific capabilities. The Sioux Indians, fighting for their way of life and united by a common set of values and faith, endured tremendous hardships to resist U.S. attempts to subdue them. Their willingness to embrace modern weapons such as the breech-loading rifle, and effectively adapt their tactics to fit the situation made them a greater threat. The moral strength and mobility of the Sioux enabled them to achieve an impressive string of victories that delayed the U.S. Army's ability to accomplish its mission. Only after committing increased resources, in the form of troops, did the Army achieve its objectives.

When considering friendly force risk at the operational level of war, planners must consider moral factors, capabilities, and forces available. Understanding the nature of the conflict is a moral consideration that merits consideration under friendly factors. Commanders and planners must understand the nature of the conflict and its ultimate aims, if they are to estimate the risk of the planned operation. The Japanese failed to consider the strategic risk created by the operational decision to press the Pearl Harbor attack in the absence of the American aircraft carriers. This decision allowed the survival of American offensive power and

[9] Nathan Freier, "In Defense of Rational Risk Assessment," (Strategic Studies Institute: www.strategicstudiesinstitute.army.mil/pdffiles/pub763.pdf), accessed on 8/21/2012.

set the conditions for the eventual Japanese defeat at Midway. By not recognizing the importance of aircraft carriers to modern naval warfare, the Japanese ignored the strength of their own carrier fleet and the very nature of the war they had started.

When assessing risk associated with friendly capabilities, not only is their availability an issue for consideration, but their actual employment is critical. Strategic decisions to develop weapons platforms that can perform multiple types of missions carry an inherent risk. For example, a multirole aircraft such as KC-130 aerial refueler can also carry troops, but cannot perform both missions at the same time. Commitment of this capability to a troop movement mission creates the risk that tactical aircraft needed to deliver close air support will have to return to base, rather than refuel while airborne and remain on station. Multirole units and equipment have an inherent risk in most circumstances as they can perform only one function at a time. That risk may be acceptable in light of the cost savings associated with multirole capabilities; however, in execution this limitation can create unintended operational risk.

Strategists considering apportionment of forces between commanders or operations must consider the risk associated with committing specific forces to specific operations or theaters. For example, the expense associated with forces capable of radar evasion or electronic warfare is normally high, and therefore these capabilities do not exist in large numbers. It follows that commitment of a specific unit to an operation means that commanders in other theaters must accept risk. During the 1990-91 Persian Gulf War, keeping Israel out of the war became an increasingly difficult strategic imperative to achieve thanks largely to constant Iraqi Scud attacks. In an effort to find and destroy Scuds in the western Iraqi desert, General Norman Schwarzkopf, U. S. Army, deployed the nation's only two experimental Joint Surveillance Target Attack Radar System (JSTARS) aircraft to search the desert for mobile Scud launchers.

As a result of committing both aircraft to western Iraq, Schwarzkopf had no ability to see Iraqi forces move south and was completely surprised during the battle of Khafji.[10] In a strategic environment framed by a reduction of resources available to fund defense budgets, risk associated with force availability is likely to increase. Operationally, commitment of a reserve force may provide the essential weight needed to exploit battlefield opportunity, but it also creates risk, as the forces available are now committed and nothing remains to commit without withdrawing forces from their current mission.

At the strategic level, planners must balance the ends, ways, means, and risk equation. Often this means making resource decisions based not only on validated operational requirements, but also on factors outside the military sphere. For much of American history, this meant measuring defense expenditures not only in terms of need, but also in terms of what the nation could afford. In times of war or crisis, spending limitations are normally relaxed, but because, at least initially, most wars are fought with the manpower and equipment purchased in peacetime, reduced expenditures on training and equipment can create a force incapable of meeting assigned strategic objectives. Commonly referred to as a "hollow force," the force looks capable on paper, but miserly spending on maintenance and training have reduced effectiveness to the point that the capability implied by the existence of a force is no longer available. The forces available to stop the initial Japanese attacks of 1941-42 were mostly equipped with obsolete and ineffective equipment, a result of the fiscal austerity brought about by the Great Depression. Although in the process of mobilizing and improving its readiness for war, years of neglect made the first years of U.S. involvement in World War II extremely expensive both in terms of both casualties and resources.

[10] Bryon Greenwald, "SCUD ALERT!: The History, Development and Military Significance of Ballistic Missiles on Tactical Operations," (Leavenworth, KS: School of Advanced Military Studies, 1994),43.

Risk Exposure: To complete the risk assessment step, planners must provide an estimate of exposure to the risk event. Recalling Horcher's differentiation between risk and exposure, planners must understand the meaning of exposure from a military perspective. Exposure in the context of military operations means the probability of occurrence, the vulnerability of the operation to the risk event, and the severity of the impact on the operation (Figure 4). A valid risk assessment must articulate the risk and the exposure to that risk. Planners must quickly identify and discount unrealistic risks, meaning those risks that have extremely low, or no exposure.

Figure 4 - Risk Exposure

When considering exposure, the most likely and most dangerous courses of action contained in the JIPOE are a useful starting point; however, use of those products alone does not assess the impact of risk to operations fully. The JIPOE process does not explore the friendly reaction to enemy actions. A thorough risk assessment requires an examination of the second and third order effects of a risk event. It is not sufficient to say that the employment of an enemy capability or the choice of a most dangerous course of action affects a unit or operation. Planners must articulate what the operational cost of countering that capability or course of action is, in terms of reduced operational capacity, inability to meet previous goals, or requirements for additional forces.

Combining self-assessment with the probability of occurrence provided in the JIPOE provides a basis for estimating exposure. While planners should not limit risk exploration to just the most likely and most dangerous possibilities, examining these options provide a quick tool for risk assessment in time constrained environments.

In most operational situations there is no quantifiable method to substantiate exposure in terms of a percentage likelihood of occurrence. Rather than provide a nondescript exposure statement such as low, medium or high, a better method for estimating exposure is to develop a list of indicators and warnings (I&W) that increasingly lead to risk event occurrence. The use of I&W is not a new concept, but not emphasized within existing U.S. doctrine on risk assessment. An I&W list provides a basis for not only estimating exposure, but also for triggering mitigation plans or reassessing the validity of the risk (Figure 5). Not designed as a sequential checklist that the enemy must follow in order for risk exposure to increase, the table is an indicator of the increase in exposure to an identified risk that each indicator represents. Figure 5 is a notional table providing I&W for the attack on Pearl Harbor in December of 1941. Most of the indicators listed were readily available to anyone monitoring the situation. Only the most critical indicators, loss of tracking of the Japanese carriers and the increase in message traffic to embassies, require specific technical capabilities. Taken separately, none of these indicators meant Japan was going to attack the United States, but presented together and weighted for severity, it helps planners and commanders identify the early symptoms of the risk event.

Recalling the writings of Nassim Taleb on predictions discussed in Chapter Two, it is important to remember that although, with careful analysis, we can estimate the essential markers of a potential attack by Japan, this table does not predict where, when, or how the Japanese will attack. It merely tells us that if these things happen, we should be ready for some

kind of attack, somewhere -- perhaps the Panama Canal to cripple the U.S. Navy's ability to shift forces between the Atlantic and Pacific Oceans. To have value, commanders must act on those types of ambiguous warnings. Kimmel and Short received war warnings in the days prior to the attack, but could not conceive of an air attack on Pearl Harbor. No tool can predict or eliminate the "black swan," the point is to recognize this limitation, act prudently on the information at hand, and prepare for consequences vice events.

Utilization of an I&W table tied to each valid risk event provides rigor to estimates of exposure. Upon approval of the table, commanders can designate a level of risk they are willing to tolerate (by percentage) prior to triggering a branch (mitigation) plan. Additionally, within the context of operational planning, the Commander's Critical Information Requirements (CCIRs) designate essential elements of information needed for timely commander decision-making.[11] Depending on the potential severity of the risk linked to the developed indicators, one or more of the risk indicators may receive CCIR designation.

Indicator	Source	DTG of Occurrence	Risk Level Contribution
Loss of tracking of Japanese Aircraft Carrier Fleet for greater than 7 days	HUMINT, SIGINT, RECON	NOV 1941	30%
Message Traffic between Japanese Home Islands and embassies (D.C & Honolulu) increases above steady state	SIGINT	NOV 1941	20%
Expansion of invasion of French Indo-China; implementation of US embargo on Japan	HUMINT, Open Source, USG Action	August 1941	20%
Japanese join Axis Powers	Open Source Reporting	22 Jun 1940	10%
Japanese Forces invade French Indo-China	HUMINT - Vichy French Gov't	20 Sept 1940	10%

Figure 5 - Notional Indicator and Warning Table

[11] U.S. Joint Chiefs of Staff, "DOD Dictionary of Military Terms," Joint Chiefs of Staff, http://www.dtic.mil/doctrine/dod_dictionary/ (accessed 20 Nov 2012).

Application of this model at the operational or strategic level provides rigor to strategic decision making in that it provides an adaptable framework to estimate exposure. A specific capability may be technically possible, but economically unrealistic unless both the requirement is valid and the likelihood of employment is established. By utilizing defined strategic end states, determining potential adversaries who may contest or oppose U.S. attainment of those end states, and establishing the indicators of adversarial action, development of an I&W matrix is possible. The effort required to develop this type of strategic matrix is complex and involves significant intelligence resources. However, a detailed estimate of risk, linked to national strategic objectives and patterned against actual or potential adversaries provides additional rigor to risk estimates.

It is not the author's intention to argue that the factors presented in this discussion limit the exploration of risk; surely additional factors contribute to strategic or operational risk. Presentation of these factors should guide the identification process rather than limit it. Mental models supported by situational awareness and creativity provide ample room for thoughtful analysis. The risk assessment, by necessity, must have limits. Not every risk is possible, or if possible, the force may have no vulnerability to it. The possible and likely must focus risk assessment.

Communicating Risk

> In carrying out the task assigned in Operation Plan 29-42 you will be governed by the principle of calculated risk, which you shall interpret to mean the avoidance of exposure of your force to attack by superior enemy forces without good prospect of inflicting, as a result of such exposure, greater damage to the enemy. This applies to a landing phase as well as during preliminary air attacks.[12]

[12] Commander in Chief, U.S. Pacific Fleet, "Operation Plan No. 29-42: Admiral C.W. Nimitz, USN, Organizes the forces under his command to prevent the capture and occupation of Midway by enemy forces," 15.

In terms of communicating acceptable operational risk to subordinate commanders, Fleet Admiral Nimitz' "Letter of Instruction" to his Task Force Commanders is perhaps the most significant and eloquent risk statement in the annals of American military history. This letter, distributed only to the Task Force Commanders, communicates the balance between the critical need to attrit the Japanese Fleet while preserving the limited combat striking power of the U.S. Fleet. As the case study shows, this statement informed RADM Spruance's decision not to chase the bait laid by ADM Yamamoto thus sealing a U.S. victory. The best assessment of operational risk is useless unless it translates into guidance for subordinate commanders, preferably articulated in operations plans or orders.

A basic tenet of public speaking is to know your audience and to speak at their level. In the same manner, risk assessments prepared for strategic decision makers should have a different focus than risk assessments geared toward enabling subordinate decision-making. Nimitz effectively communicated risk to his subordinates, but no evidence exists that he used the same verbiage to communicate the risks of the Midway operation to the President and the Chief of Naval Operations. In that light, the next section discusses communicating both operational and strategic risk assessments.

Operational Risk Communication: U.S. Doctrine includes an operational risk statement in the commander's intent. The statement of commander's intent provides subordinates with the information they need to execute the plan in a decentralized environment, much like what Spruance faced during Midway.[13] Joint Publication 5-0 defines the operational risk statement as, "aspects of the campaign or operation in which the commander will accept risk in lower or partial achievement or temporary conditions. It also describes areas in which it is not acceptable

[13] U.S. Joint Chiefs of Staff, *Joint Operations Planning*, Joint Publication 5-0, III-17.

to accept such lower or intermediate conditions."[14] Many times the risk statement is an acknowledgement of resource limitations that prohibit the commander from equally weighting all subordinate commands with like forces and capabilities. That type of statement does little to translate that acknowledgement of risk into guidance that supports sound decision making at the tactical level.

Effective operational risk statements should augment the overall intent statement by providing subordinates with decision criteria. Nimitz gave his subordinates that decisive criteria, and relied on them to recognize their own tactical capabilities and those of the enemy. He provided a standard, "the principle of calculated risk," then provided a metric, "avoidance of exposure of your force to attack by superior enemy forces without good prospect of inflicting, as a result of such exposure, greater damage to the enemy." He ended the statement by providing the duration of his guidance, "This applies to a landing phase as well as during preliminary air attacks." Confident in his subordinates' knowledge of the strategic situation and the need to preserve the force, he gave them guidance they applied without seeking clarification during the battle. He knew battle is the domain of chance and that he could not control every aspect of the fight. The criteria he provided (standard, metric, and duration) are a good basis for developing the operational risk statement.

Nimitz, a 1923 graduate of the Naval War College and veteran submarine commander, understood that the vast space of the Pacific Ocean and the limitations of communications required that he provide clear intent to his subordinates.[15] *Sound Military Decision*, a publication of the Naval War College since 1910 (published as *Estimate of the Situation* from 1910 - 36) and utilized as the reference publication for instruction on solving military problems,

[14] U.S. Joint Chiefs of Staff, *Joint Operations Planning*, Joint Publication 5-0, III-17.

[15] Potter, *Nimitz*, 138.

contains a reference to the role of calculated risk.[16] Although it is unknown if this document was the source of Nimitz' understanding of calculated risk, it provides a theoretical basis for his "Letter of Instructions." *Sound Military Decision* offers a brief, but concise explanation of the role of risk in military operations and encourages a knowledgeable acceptance of risk in light of the potential costs. "Moreover, the need for swift and aggressive action in many activities (notably in war), for resolute prosecution of the plan, for timely seizure of opportunity, and for acceptance of justified risks, requires that consideration of consequences as to costs never be emphasized beyond its proper weight."[17] Although it does not specifically state how to communicate risk, *Sound Military Decision* encourages commanders to determine the risk vs. reward equation similar to Nimitz's "Letter of Instructions."

Strategic Risk Communication: At the strategic level of war, statements of risk are often less precise than at the operational level, so the need for supporting analysis to support risk statements is even more evident. Advising senior civilian leadership on the risk associated with procurement, force strength levels, or execution of contingency plans is a difficult and politically challenging task. Historical analysis and simulation and modeling as well as analysis of the current strategic environment all play into a well-constructed risk statement.

Products developed during the risk assessment step provide a framework to place strategic challenges and opportunities into realistic groups. Combining the identified risk with a broad concept of exposure provides a basis for better developing risk assessments. In terms of contingency planning, basing the assessment around the significance of the risk event or it's magnitude in comparison to the adversary's capability to cause the event is a useful way to frame the assessment.

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[16] *Sound Military Decision*, the 1942 edition, is the earliest copy of this document the author could locate.

[17] U.S. Naval War College, *Sound Military Decision*, (Newport, RI: U.S. Naval War College, 1942), 85.

An essential portion of estimating strategic risk exposure is to estimate the possible timeframe of the event. A temporal framework provides a necessary metric for weighing potential mitigation strategies. The risk associated with an adversary estimated to develop a specific capability in ten years is likely to have a different mitigation strategy than that associated with an adversary believed to be the final stages of capability development. The Japanese perceived the American oil embargo coupled with the announced naval build up as urgent threats to the existence of the empire and acted to stop the threat. The United States, in comparison, saw the threat posed by German advances through Europe and the isolation of the United Kingdom as the immediate threat, and sent large amounts of material to the U.K. instead of toward its Pacific garrisons.

Strategic decisions often occur after a drawn out process of deliberation and consideration. Because time is not as critical a factor, a more formalized assessment is possible. At a minimum, a strategic risk assessment should include:

1. A summary of the strategic environment
2. Identified risk factors drawn from the strategic environment
3. Estimates of exposure to each risk factor (probability, severity, vulnerability)
4. Timeframe or duration of risk exposure
5. Potential mitigations for each risk factor (if possible)
6. Potential hedges for risk factors without identified potential mitigations

Development of a common lexicon is essential to the goal of providing meaningful risk analysis. Each concept may not have utility at each level of war, but a clear definition enables an understanding across the spectrum of warfare. The below terms represent the beginning of more precise risk assessment lexicon, development of which is essential if risk communication is to improve.

Black Swan (Consequence) Preparation - As defined by Taleb, Black Swans are events outside normal expectations that carry an extreme consequence. As these events are

outside the norm, the only way to mitigate them is to prepare for their outcomes. These outcomes are similar to outcomes from other more predictable events.

Diversification - In a military sense, diversification mitigates risk by ensuring a particular capability is resident in multiple weapons, units, or systems. For diversification to work, each weapon, unit, or system must have a different mechanism of action, thereby preventing one technique or technology from countering them.

Exposure - In the context of military operations exposure, is the probability of risk occurrence, the vulnerability of the operation to the risk event, and the severity of effect on the operation.

Hedge – Most often applicable at the strategic level, hedging is utilization of a negatively correlated element of national power (Diplomatic, Informational, Military, Economic) to the primary element under consideration to achieve the desired strategic end state.

Military Risk – The probability, severity, and vulnerability of a military force to events that create significant jeopardy to mission accomplishment or force preservation. Initially identified during the strategic assessment or operational planning process, military risk assessment is an iterative process requiring review as the strategic or operational environment changes.

Shortfall Risk - The risk that a proposed course of action will fall short of mission accomplishment. Most often caused by resource limitations, excessive shortfall risk should result in development of revised end states or the application of additional resources to the operation.

Transfer – The assignment of risk to another echelon of command, either intentionally or unintentionally. For example, strategic decisions often transfer risk to operational commanders in the form of reduced resources or operational restraints.

The Risk Decision

The next step in the proposed model is the risk decision. Risk decision represents the commanders input to the risk assessment process. The decision of what to do about the risks identified in step one and communicated in step two is the critical element of the risk assessment process, as the action taken during execution is determined by the perception of risk. There are four basic outcomes of the risk decision process: accept, mitigate, reject and paralysis (Figure 6). The decision made in this step leads directly to and determines the nature of the final step, action.

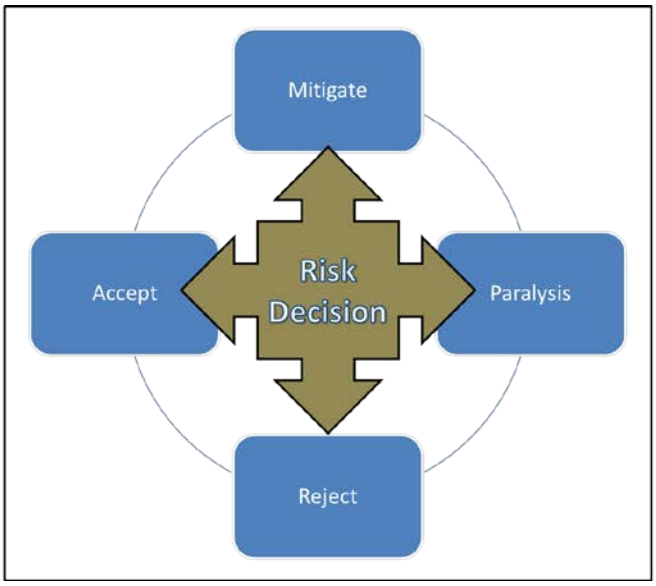

Figure 6 - Risk Decision Outcomes

The phrase "accept risk" implies an intent or foreknowledge. In terms of risk analysis, this is not a correct assumption. Knowingly accepting risk is a legitimate outcome of this process compared to the unknowing acceptance of risk, which is the result of either conducting a limited risk analysis or neglecting to consider risk during planning. No process, however detailed, can guarantee coverage of all risks. However, by applying a framework to the problem of risk analysis, a reduction in the occurrence of the unknowing acceptance of risk is possible. In certain situations, the knowing acceptance of risk is essential; after all, war is by its very nature risky.

Accepting risk unknowingly is common in history. The Sioux Campaign dramatically illustrated the difficulty of meeting strategic objectives with a hollow force, and shows how difficult maintaining a capable force with limited budgets can be. President Grant, the former Commanding General of the Union Army during the Civil War, did not adequately resource his frontier army to conduct a campaign against the Sioux. Due to financial distress brought on in part by the Civil War and a downturn in the business cycle, the government chose to under equip

and under man formations. Post-Civil War reconstruction of the South, along with the lack of an identified foreign threat, contributed to the lack of urgency placed on resourcing the frontier army. Only after the shocking defeats at the Powder River, Rosebud, and Little Bighorn did any improvement in the condition of the force occur. Ultimately, Grant accepted the risk of being unprepared, likely without realizing it. After the disaster of the Sioux Campaign of 1876 and the Nez Perce War of 1877, the Army ensured it had adequate combat power to deal with the final Indian uprising, the Ghost Dance of 1890-91.[18] Although still not adequately equipped, the Army deployed overwhelming force to deal with the potential resistance of Sioux Indians in South Dakota.[19] The Army learned to mitigate the risk of a major battle by applying overwhelming force, if not a well-equipped one.

The next possible outcome of the risk decision is to mitigate known risks. Successful mitigation of risk requires the validation of the identified risk and the assignment of a viable method to reduce the risk. Development of branch plans within the campaign plan, request for and receipt of additional forces, or changing the determined course of action are all potential mitigation tactics. Commanders determine the sufficiency of mitigation efforts and implement mitigation tactics as required during execution.

At the strategic level of decision-making, risk mitigation migrates closer to the concept of hedging introduced earlier in this paper. Strategists seeking to balance the ends, ways and means with the risk associated with reaching the defined objectives may look to less precise methods to hedge risk. For example, during a time of fiscal constraint, strategists faced with the need to contain a large regional competitor while engaging in several small contingencies may be unable

[18] Indian warfare did not cease entirely after the Sioux Campaign. Notably, the Nez Perce Indians led the army on a 1,000 mile fighting pursuit in 1877, and some bands of Cheyenne Indians resisted until the 1880's. Indian warfare finally ceased after the tragedy of the Ghost Dance.

[19] Charles D. Collins, Jr., *Atlas of the Sioux Wars*, 2d Edition,88.

to justify an advanced weapon system with little utility outside of a major war. The hedge placed against this potential capability gap may be a renewed diplomatic or economic effort to incorporate the regional competitor into the established international economic order. As the competitor's integration into the established economic order increases, the likelihood of war decreases, which reduces the risk created by not acquiring the costly weapons system. For purposes of this paper, risk mitigation is the development of specific actions or plans in response to identified risks and applies primarily to the operational and tactical levels of war, while hedging, as previously defined, occurs primarily at the strategic level of war.

Mitigation is not the cure all for risk. At Pearl Harbor, MG Short thought by dispersing aircraft from hardened enclosures to the airfield ramps mitigated the risk posed by what he deemed as the most likely threat: sabotage. He directed aircraft ground crews to spend weeks training as infantrymen to augment the ground defenses in the event of invasion. He did not keep ammunition by anti-aircraft guns or keep radars working round the clock because he dismissed the possibility of aerial attack. His mitigation plans lacked an understanding of the threat and, indeed, of the very nature of warfare in the mid-20th Century. Did he think that a ground invasion of Hawaii would begin without some form of aerial bombardment? Again, Taleb cautions, "Narrow-minded prediction has an analgesic or therapeutic effect. Be aware of the numbing effect of magic numbers. Be prepared for all relevant eventualities."[20] His caution is not a call to attempt to mitigate all possible risk, but is a reminder not to focus on one specific enemy capability while ignoring others.

The next possible outcome of the risk decision step is risk rejection. This occurs when a commander designates the risk as valid, but determines any proposed mitigation tactics are

[20] Nassim N. Taleb, *The Black Swan*, 203.

invalid and defers the decision to a higher headquarters for action. Rejection of an identified risk is not a common outcome of the risk decision process. Under normal circumstances, as part of the mitigation process, commanders that identify risks that are beyond their capability to mitigate with the forces assigned seek reinforcement through higher headquarters. In cases that fall outside of an operational commander's responsibility, yet create unacceptable risk levels, strategic policy makers should address risks outside the realm of military operations, primarily through diplomatic, economic, or informational means. Rejection of risk does not absolve commanders and staffs of the need to understand the higher-level mitigation or hedging plan and their role in that plan.

The planning for Operation Iraqi Freedom is a recent example of how risk transfer does not relieve commanders of the need to understand the mitigation plan. During the planning for the invasion of Iraq in 2002, U.S. Army General Tommy Franks, as commander of U.S. Central Command (USCENTCOM), learned that the Under Secretary of Defense for Policy would take the lead on planning for post-Iraq War reconstruction. Franks interpreted this to mean that he was relieved of planning responsibility for post-war reconstruction, and therefore he did not need to participate in and support DOD stability planning efforts. He chose instead to focus his planning on security alone.[21] Franks rejected the risk inherent in stability operations, and the SECDEF transferred the responsibility for planning for those operations. He did not transfer the responsibility for execution of stability ops, which remained with USCENTCOM. Franks' focus on security, to the exclusion of participation in stability planning, created risk by separating the security function from the stability function.

[21] Bob Woodward, *State of Denial*, (New York, NY: Simon and Schuster, 2006), 91.

Paralysis is the final possible outcome of the risk decision step. Simply put, paralysis is inability to accept, mitigate, or reject risk. Risk paralysis prevents rapid decision-making and inhibits exploitation of circumstances on the battlefield. Balancing risk mitigation with risk acceptance is the natural counter to risk paralysis. Commanders must seek to explore the impact of risk on their operations, but in doing so must also guard against creating a risk averse mindset that inhibits staff functioning and operational execution.

In the Peninsula Campaign, MG McClellan allowed risk to paralyze his decision-making. He focused on President Lincoln's refusal to assign all the forces around Washington, D.C. to the Peninsula. McClellan accepted seemingly impossible enemy strength estimates because they confirmed his personal belief that he was outnumbered and in desperate peril. By not challenging the numbers, or accepting them and altering his operational approach, he allowed his perception of risk to overwhelm the momentum his bold landing had created.

Action

The risk decision leads to an action, even if that action is inaction. After identifying and deciding on the proper manner to deal with risks, commanders and staffs must take action. Implementation of mitigation plans must occur, as should the integration of the identified indicators and warnings into intelligence collection plans and assessment plans. While no plan can account for all risk inherent in war, a sufficient plan can mitigate the events that are foreseeable, and establish conditions that enable survival in the event of unforeseen or "black swan" events.

If the mitigation plan calls for development of branch plans, then a reexamination of any indicator and warning product should occur to enable development of decision points to support implementation of the branch plan. If a commander rejected risk and requested more forces to

enable conduct of the operation at an acceptable risk level, then a new strategic risk assessment should determine if approving the request generates additional risk elsewhere in the theater or worldwide.

As Lee demonstrated at Chancellorsville, recognizing risk does not always translate into this process. Lee knowingly accepted risk with no mitigation or rejection and he wagered the survival of his army on the success of a bold maneuver. Trusting his subordinates, he gained a victory against nearly overwhelming odds in part from an aggressive attitude toward risk. Once he approved Jackson's plan, he committed all the forces he could spare, and sought to seize any advantage the attack could bring. Even the loss of Jackson did not sway Lee from his aggressive pursuit of victory. He understood the danger his army faced, and would not allow inaction to cause defeat. His determination to reunite his army and eliminate the risk he created reflects in his message to MG James Ewell Brown (J.E.B.) Stuart upon Stuart's appointment to replace Jackson, "It is necessary that the glorious victory thus far achieved be prosecuted with the utmost vigor, and the enemy given no time to rally. As soon, therefore, as it is possible, they must be pressed, so that we may reunite the wings of the Army." [22]

[22] Ernest B. Furgurson, *Chancellorsville, 1863: The Souls of the Brave*, 215.

CHAPTER 5: CONCLUSION

Each individual has different tolerances for risk and that tolerance drives what each person recognizes as a risk. The various definitions of risk do little to provide clarity on the idea of risk in military operations. This lack of clarity, coupled with the natural differences between individuals, creates a gap in doctrine that can result in imprecise and inaccurate risk assessments. Worse still, the lack of an accepted methodology for communicating risk assessment leaves commanders and planners attempting to explain a complicated idea without a common glossary or framework. This gap creates an additional risk, a cognitive gap, between strategic decision makers and military professionals over what constitutes risk.

Through review and study, ideas on how to analyze risk, determine its impact, and manage it become evident. The doctrine of our closest ally, the United Kingdom, is more specific and useful in its definition of military risk. Business literature also provides perspectives on risk and risk management that add to the understanding of military risk. Historical analysis lends empirical data to support the idea that commonalities exist in assessing risk. Existing literature and doctrine combined with historical analysis enable development of a mental model to aid planners in rapidly assessing risk and communicating it to seniors and subordinates alike.

Humanity's ability to forecast the future is poor. Index funds are the financial marketplaces acknowledgment of the risk associated with picking top performing stocks. By allowing investors to purchase a share of the entire market vice a share of a single company, index funds remove one risk in exchange for more limited returns. This method creates shortfall risk, the risk that the chosen strategy is inadequate to meet the desired end state. In military

operations, a given course of action faces a similar risk of shortfall in that it may not be adequate to reach the desired end state.

The idea of managing risk through consequence preparedness vice an event focus is important. A unit prepared for operations in a chemically contaminated environment is ready for that consequence. It does not matter how the contamination occurred. Advocates of this type of risk management argue that man's dismal forecasting record makes this technique the only viable way to manage risk. However, this type of risk management still requires risk analysis, because resource limitations prevent preparing for every possible consequence. Strategists and planners must determine the exposure of the force to the risk event, prior to determining if a potential consequence merits preparation.

Chance and risk are central to the nature of war. Spectacular victories such as Midway and Chancellorsville are not possible without commanders who are able to embrace the opportunity presented by knowingly accepting risk. Nimitz and Lee shared a similar understanding that accepting risk could open the door to victory against overwhelming force. In desperate situations, these two commanders utilized risk to gain victory -- a skill that future joint force commanders may need to develop as the American ability to apply overwhelming force diminishes.

Likely characterized by smaller standing armed forces with reduced capabilities, the American military of the future faces a somewhat unfamiliar risk profile, when compared to the last ten years. Strategists attempting to balance the ends, ways, means, and risk equation may accept more risk by reducing the means required. A reduction in means available, without a corresponding altering of the desired end state or the way utilized to reach that end state leads inevitably to an increase in risk. A resource-constrained strategic environment normally

transfers risk toward the tactical level. Transferred in the form of reduced training, equipment and staffing, these decisions can translate to a less capable force.

The lexicon proposed in Chapter Four is a start toward a more meaningful understanding of risk terminology and its use creates a baseline for understanding and communicating risk. Likewise, the proposed mental model for risk analysis helps planners examine the strategic and operational environment to better estimate the risk of proposed military operations. This methodology is similar to other mental processes utilized in joint operation planning, most notably the method utilized to both visualize the operational environment and to develop the operational approach.

Acceptance, in some form, of the proposals developed in this paper will improve the risk assessment and mitigation planning conducted by the joint force. The consequences of doing nothing to improve risk assessment and communication increase as the resources dedicated to defense decrease. Further, the strategic environment is changing rapidly, both domestically and globally. In response to these changes, the Joint Force Commander requires a better method for understanding, estimating, and communicating risk to ensure effective evaluation of potential hazards to operations. The methodologies utilized to determine risk in military operations are inadequate to aid commanders faced with a resource constrained future environment. Just as doctrine changed to embrace a formalized statement of commander's intent, it can change to standardize the assessment and communication of risk.

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